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THE  
*CALCUTTA REVIEW.*

VOLUME XII.

October 1839.

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*No man who hath tasted learning but will confess the many ways of profiting by those who, not contented with stale receipts, are able to manage and set forth new positions to the world: and, were they but as the dust and cinders of our feet, so long as in that notion they may yet serve to polish and brighten the armoury of truth, even for that respect they were not utterly to be cast away.—MILTON.*

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THE  
CALCUTTA REVIEW.

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- ART. I.—1. *Progress of Russia in the East. 2nd Edition.*  
1838.
2. *Quarterly Review, No. CXXVII. Art. 7.*
3. *Foreign Office Correspondence relating to Persia and Affghanistan, presented to both houses of Parliament by Her Majesty's Command. 1839.*
4. *Records of the Indian Government.*
5. *The Bombay Times, &c. &c.*

PERSIA, which has almost disappeared from the political horizon since the Affghan war, is now again looming in the field of sight. The country is undergoing that shock which it periodically sustains, when the occupancy of the throne is changed; and although, upon the present occasion, neither does the immediate paroxysm threaten to be internally of a very violent character, nor is it accompanied for the moment with any morbid symptoms from without, still we cannot think the crisis altogether undeserving of attention in India.

There is probably no political question, connected with our Indian Empire, which has been treated more frequently, or with greater discrepancy of result, than that which pretends to fix the nature, the limits, and the value of the true interests that we possess in Persia.

Party-writers and economists, historians and pamphleteers, statesmen and journalists, have, at different periods, and under different particular phases of the subject, examined it with more or less of competency and care; and, if the acts of Government may be taken as an index of the pressure of the times, the effect of these varied agencies upon the public mind must have been to invest our relations with Persia, in popular opinion, with every possible degree of consideration, from that of absolute vitality to one of comparative worthlessness. We commenced with a magnificent embassy, which was followed by complete isolation. We descended in our next essay like Jupiter in an avalanche of gold; but ere long we took advantage of poor Danaë's distress to drive a bargain with her of

extraordinary rigour, and even of doubtful honesty. A third time we beheld our Syren transformed into a Hydra, and we plunged into a contest on her account, as momentous as any that figures in the page of Indian History; and yet, although the issue of that war must have increased tenfold our danger—if such danger ever had existed—we have since its conclusion held on our way with an inert complacency, that would hardly have been justified in our palmiest days of security and strength.

• “ Nil fuit unquam  
“ Sic impar sibi.”

The most remarkable circumstance, however, is, that while we have exhibited this strange inconsistency; while we have belied, in respect to Persia, the otherwise traditional character of our Eastern policy; yet if there has been one branch of our Indian external interests, which, from its nature, has been not only less than any other altered, but has been less susceptible of alteration, it has been that which relates to the value (be it for good or ill) of our connection with the Court of Teheran. Organic changes are as difficult in nations, as they are in individuals. Eastern society above all, immovable alike in its predilections and its prejudices, sustains the action of half a century without any sensible effect; and the picture therefore of Persia, as it appeared to Captain Malcolm on his first visit to the Court of the Shah, conveys, as far as all essentials are concerned, a faithful representation of the country at the present day.\* Considered also politically, since Zizianoff crossed the Caucasus, and Lord Lake entered Delhi, the substantive relations of Persia to the European powers (we exclude party intrigues, personal feelings, ephemeral interests, as of no consequence to the general question) can never by possibility have varied. Shut in between her colossal neighbours, the country has been held together by their opposing pressure. She has received influences, but has never imparted them: her condition has been strictly passive, and the tendencies, to which she has been exposed, have been constant and uniform. If it be wise at the present time to fold our arms in dignified composure, and look on Persia with indifference, then our lavish subsidies have been a folly, and our wars, costly as they have been in blood, in honour, and in

\* Malcolm, indeed, ventures to assert, that “ the Persians, as far as we have the means of judging, are not at present a very different people from what they were in the time of Darius and of Noosheerwan;” but we cannot concede this dictum in all its latitude. We think it would be difficult to find a greater contrast than that obtained by comparing the autobiographic records of Darius at Bisitun with the Firman issued by Abbas and Shah on his return from the siege of Herat; and, if we may judge of Heracles by his foot, we may surely estimate a nation from the mouth of its ruler.

treasure, have been a crime. If, on the other hand, our past policy has been sound, then our present supineness may well excite surprise.

Notwithstanding all that has been published on the subject of Persia, we still doubt if the question of her real abstract value, in regard to India, has ever yet been fairly treated. We enter our formal protest against fancy-pieces, party-articles, and against all political papers written for a purpose, whether that purpose be detraction or apology. We will go even further, and assert autobiographic history to be in its nature liable to suspicion. The writer, however able and however honest, who undertakes to describe and reason on the political events amongst which he is moving, encounters the same difficulties as a painter, who should seat himself at the library table to sketch the façade of the mansion he inhabits. The "*quorum pars magna fui*" is a positive impediment. Preconceived impressions, and personal associations, must inevitably disturb the natural current of enquiry, and divert it into stranger channels. Still less, too, are mere programmes to be depended on. Designed to justify some particular line of policy, they explode, if that policy should prove unsuccessful. We do not mean to say that they are useless, or that the "*respicere finem*" of the Athenian sage can be applied generally to the science of politics. Doubtless, when an occasion arises, emergent and exceptional, the available lights of the moment must be followed; delay would be fatal. There must be to a certain extent an adventurous movement—a leap in the dark; and posterity can alone benefit by the issue, in obtaining another element for future calculations; but with regard to the "*pièces justificatives*,"—those specious, often convincing guides—they must still come before the tribunal of experience, and be judged by the result. If their predictions are verified, the arguments on which they rest will remain a proud memorial of human foresight and sagacity. If, on the other hand, they do not stand the test of time, whatever respect may be paid to their ingenuity, they can have no permanent claim on consideration.

These remarks are particularly applicable to the principal "*brochures*" that have issued from the press on the Persian question. Undoubtedly the two ablest of these papers, which have appeared in modern times, and which, from their opportuneness and ability, have exercised the most influence on the public mind, are those that we have placed at the head of the present article. Sir John McNeill, from whose pen they are well known to have

proceeded, united to the most perfect familiarity with his subject, a cool and comprehensive judgment, the rare advantage of a freedom from political bias, and as little perhaps of local prejudice as was compatible with his personal identity; yet, after the ample interval of ten years' probation, do his positions, we ask, sustain their reputation? Can his arguments, flowing as they invariably do, in a clear and continued series of inductions, or his inferences, legitimate—nay imperative—as they seem, be now quoted as standard authorities? We think not, and for this simple reason, that, if they prove anything, they prove too much. If "the progress of Russia in the East" had been, indeed, as constant and inevitable as the antecedents, which he grouped together, led him to believe, ten years—and ten such years—could not have passed over without a much more marked development than has, in reality, taken place. If it were indispensable in 1838 to establish a strong British influence in Affghanistan, in order to keep at a distance certain dangers with which India was threatened, that influence could not have been annihilated in 1842, without the dangers becoming by this time so imminent, as to be no longer matters of speculation. Accidental circumstances, we admit, may at any time interpose to check or divert the natural course of events; but the possibility of those very circumstances should form an integral item of account in working out every political problem. This item, indeed, is of the same value in considerations of policy, as the doctrine of chances in the calculations of the actuary; and by its omission any argument is as essentially vitiated as by erroneous premises.

We propose then, in the murky atmosphere of Calcutta, and without such full aids as we could desire, to re-open the Persian question; and we promise our readers that, if they should discover no great novelty or merit in our views, they will, at any rate, obtain a just idea of our general connection with the country, and will, moreover, find those particular points, on which opinion is so much divided, treated in a fair and candid spirit of enquiry.

It was at the close of the last century, under the administration of the Marquis of Wellesley, that the Government of India first thought of opening political relations with the Court of Teheran. As we do not profess to be here writing a history of the British connection with Persia, whilst at the same time we are loth to leave entirely blank any portion of our outline sketch, we must throw into the form of a brief narrative such information as we possess of our dealings with the Court of Teheran

prior to Captain Malcolm's mission. Lord Wellesley's attention had been drawn to the North West frontier of India shortly after his arrival in the country, not merely by the power and avowed hostility of Shah Zeman, and by the notorious fact of an ambassador having travelled from Mysore to the Punjab, but by the discovery that Vizier Ali of Oude had also appealed to the avarice of the Affghan King, by offering a donation of three crores of rupees, in the event of his own restoration to the musnud through the Affghan arms, and by proposing in the mean time to assign, for the uses of the Shah, the fifty-five lakhs payable from Oude for the maintenance of the British Contingent.

Mehdi Ali Khan, accordingly, a Persian nobleman naturalized in India, who was then acting as the Company's Resident at Bushire, was instructed "to take measures for inducing the Court of Persia to keep Shah Zeman in perpetual check (so as to preclude him from returning to India), but without any decided act of hostility;" and two or three lakhs of rupees were to be expended annually, at the Khan's discretion, for the purposes above specified,—“the plan of subsidizing the whole army of Persia being (in Lord Wellesley's language) more extensive and expensive than circumstances seemed to require.”

Agreeably to these instructions, Mehdi Ali Khan, early in 1798, opened a correspondence with Teheran, for the purpose of persuading the Shah, (who however needed no persuasion) to send the two refugee princes, Mahmud and Firoz, with a respectable force into Affghanistan.

Some court-intrigue was employed on the occasion, and the expedition actually took place; but there is every reason for believing, that it would have equally taken place without the interference of our agent; for the project was in entire accordance with the temper and policy of the Persian court, and had been moreover actively discussed before the receipt of Mehdi Ali Khan's communication. This expedition, which was badly conceived and worse executed, turned out a complete failure; and so little disposed were we at the time to take credit for having instigated the movement, that it was eight years before the Indian Government could be persuaded to reimburse to the Agent employed at Teheran the paltry sum of 17,000 Rupees, expended on the personal outfit of the princes.

Futteh Ali Shah took the field in person for the first time in 1799, for the avowed purpose of “conquering and reducing the countries of Candahar and Herat,” and without any further communication with Mehdi Ali Khan. Letters had been written by

that officer to the court of Teheran, and, by the highly coloured statements which they gave of the atrocities committed by the Affghans on the Shecahs and Syuds of Lahore, these were certainly calculated to excite the sectarian animosity of the Persians;\* but it was not in consequence of these letters that the expedition was organized. His Majesty received the inflammatory despatches on the borders of Khorassan : and we were indebted, therefore, for the withdrawal of Shah Zeman from Lahore to Peshawar, which immediately followed his receiving intelligence of the Persian movements, to the ambition of Futteh Ali Shah, and not to our own diplomacy : and upon this ground we rejected a subsequent claim brought forward by the Persians for indemnification.

The campaign of 1799 was of very short duration, and of no great importance even in its local effects. His Majesty returned to the capital, in the autumn, and there received Mehdi Ali Khan, who had in the mean while wended his way from Bushire to the capital, to endeavour by personal intercourse with the Shah's Ministers more steadily and effectually to carry out Lord Wellesley's policy. The Agent expended about two and a half lakhs of rupees upon this mission, thus giving the Persians a foretaste of British prodigality : and it is possible (although there is no sufficient evidence of the fact) that it may have been partly owing to his advice and promise of pecuniary aid, that the Shah again marched into Khorassan in the spring of 1800. Mehdi Ali Khan in January of that year returned from Teheran to Bushire, and joined Captain Malcolm very shortly after the first British mission had set foot upon the soil of Persia.

The immediate aim of Captain Malcolm's mission, in 1800, was to push forward a Persian army on Herat, as a means of diverting Shah Zeman from his long-threatened descent on Hindustan ; and this was undoubtedly a legitimate object of diplomacy. The invasion of India and the defence of Khorassan had been the stimulant and opiate which, ever since Shah Zeman's accession to the throne, had alternately inflamed and paralyzed his ambition. The Affghan king had, on two occasions, advanced in person to Lahore, but had been compelled to retrace his steps

\* Mehdi Ali Khan was an active and faithful servant of the Company, and not an unskillful negotiator ; but his florid statements and thoroughly oriental colouring scandalized, on more occasions than one, the British authorities even of that age, when veraciousness was certainly not the distinguishing feature of our political correspondence. He commences the letter in question with a very pretty specimen of his craft. " Lord Mornington," he says, " and Mr. Duncan, and all the Sirdars in the Company's service are indifferent as to the entering or not of Shah Zeman into Hindustan, as the fame of the European Artillery is well known, a trifling instance of which is that 700 of their brave troops not long ago defeated three lakhs of Suraj-ed-Dowlah's forces !"

by troubles in his rear. He was still intent on conquest beyond the Sutlej, when Captain Malcolm quitted India. It is, however, erroneous to suppose, that we were indebted to the mission in question for our deliverance from the danger which threatened us.\* That the storm was dissipated in the manner suggested by Lord Wellesley before it reached our frontier, and that the clouds never again collected in dark lowering masses, was creditable to His Lordship's foresight, but was entirely independent of his measures. The second expedition, indeed, of Futteh Ali Shah into Khorassan in 1800, which drew Shah Zeman from Candahar to Herat, took place almost simultaneously with Captain Malcolm's journey from the south of Persia to the Capital. His Majesty received the British mission at Teheran in the autumn of the same year, after his return from Subzawar; and the subsequent proceedings of Shah Mahmood, which disconcerted Shah Zeman's arrangements at Peshawur, and which led, in the sequel, to his dethronement, so far from originating in British instigation, or in Persian support, were in reality indebted for their success to their entire independence of all foreign aid. As the minion of Persia, Shah Mahmood could never have prevailed against his elder brother. As the popular Duráni champion, he was irresistible.

Captain Malcolm appears, however, to have had other instructions than those which related to our relief from the positive danger of Affghan invasion. At this time a Gallophobia reigned rampant in India. Napoleon was the "bête noire" of Lord Wellesley's dreams; and thus, although there seems, in reality, to have been no more reason for suspecting the Directory to have entertained the design of injuring us through Persia, than there was for apprehending danger to British India from the inflated proclamation of a Mauritius Governor, Captain Malcolm was nevertheless empowered to contract engagements with the Shah, in regard to the French nation, of so stringent—nay, of so vindictive—a nature, that they have been characterized by one of our ablest, as well as most impartial, political writers, as "an eternal disgrace to our Indian diplomacy."† In those en-

\* For a minute and honest detail of these events, see Elphinstone's *Cabul*, Vol. II, p. 316. It is of the more importance that historic truth should be vindicated in this matter, as the error that we have noticed originated with Captain Malcolm himself, who in his *History of Persia*, Vol. II, p. 215, had the assurance to write that his "policy had the temporary success which was desired of diverting the Affghans from their meditated invasion of India." On such authority, Dr. Conder may be pardoned for stating in the *Modern Traveller*, (Persia, p. 237,) that, "the mission fulfilled all its objects. The Shah gladly embraced the opportunity to invade Khorassan; and his conquest had its anticipated effect of recalling the Affghan chief from his Indian expedition."

† Sutherland's *Sketches*, p. 30.

engagements it was provided, that, "should an army of the French nation, actuated by design and deceit, attempt to settle with a view of establishing themselves on any of the Islands or shores of Persia, a conjoint force shall be appointed by the two high contracting parties to act in co-operation, for their expulsion and extirpation, and to destroy and put an end to the foundation of their treason; and if any of the great men of the French nation express a wish or desire to obtain a place of residence, or dwelling, in any of the islands or shores of the kingdom of Persia, that they may raise the standard of abode, or settlement, leave for their residing in such a place shall not be granted." Captain Malcolm further persuaded the Shah to issue a Firman to the provincial Governors, which directed that "you shall expel and extirpate the French, and never allow them to obtain a footing in any place," and added that "you are at full liberty to disgrace and slay the intruders."

Can we be surprised that Monsieur Langlès, writing of these engagements, after the passions of the hour had subsided, termed them "ridiculous and even injurious?"\* Is it not, indeed, a significant admission of their inability to stand the test of public opinion at the present day, that the treaty, which embodied them, was excluded from the State papers presented to the House of Commons, on March 9th, 1839?† We confess that we fully participate in the condemnation which Colonel Sutherland has expressed of them on the score of their morality; but we go even farther, and affirm that they were unnecessary in their nature, unsound in their policy, and pregnant with evil consequences; unnecessary, inasmuch as they were aimed at an imaginary danger; unsound in providing for that danger a remedy too potent, or at any rate too violent, to be efficacious; and of an almost suicidal tendency, in exposing the vulnerability of our Indian Empire, and thus courting, instead of averting, attack. It was an unhappy augury for our future intercourse with Persia, that our political relations should have commenced under such auspices. It was

\* Voyage de Chardin. Tom. X., p. 232. Captain Malcolm coolly replied to the Frenchman's statement that, "*it was exactly opposed to the truth.*"

† It is possible however that the exclusion of this document from the Persian State Papers may have been owing to certain doubts being entertained, whether the treaty ever came into operation; for we find Governor Duncan stating in 1806, that "there was an impression on his mind, that the final ratification and interchange of the treaty of 1801 were not to take place till after the arrival of Hadjee Khaleel in Bengal, which never having occurred, the Supreme Government could judge how far it might be allowable to consider it as not now in force." We have never seen the validity of the Malcolm Treaty questioned in any other quarter; but assuredly, if its ratification and interchange never did in reality take place, it was diplomatically allowable to ignore the whole transaction.

ominous of the troubles we should have in the sequel to encounter, that we originated the idea of "the road to the English" lying through the Persian Empire;\* and, if we have since had occasion to complain of the insincerity of the Court of Teheran, or of its desire to profit by the jealousy of the European powers, we should do well to remember, that the secret of the value which we placed on the country from its geographical position was first revealed to the wily Persian by ourselves.

But Captain Malcolm's Treaty was not, perhaps, the most objectionable feature of his mission; his prodigality left a more lasting impression, and that impression, in the ratio of its original force and effect, has operated ever since to our prejudice. So lavish was his expenditure, that he was popularly believed to have been granted a premium of 5 per cent. on all the sums he could disburse; while the more intelligent, who rejected an explanation savoring so strongly of the "Arabian Nights," could only draw, from his profusion, an exaggerated estimate of the wealth of England, or an inordinate appreciation of the value which we placed upon the Persian alliance. Money, we know, in the moral world, is much like opium in the physical. The stomach, once drugged, is insensible to milder stimulants; and thus, ever since we administered the first fatal dose, to create an influence, or to persuade the Persians of our really being in earnest in seeking for their friendship, we have had to follow the same pernicious treatment, with a merely temporary effect upon the patient, but to the ever active depletion of our Indian store, from which the prescriptions have been drawn.

We cannot close our notice of Captain Malcolm's mission, without alluding to another project which occupied much of his attention, and which, although it found little favor with Lord Wellesley at the time, has since been much canvassed, and sometimes even carried into partial execution. That India was menaced with danger from the European powers, Capt. Malcolm never doubted; and with this position, taken in the abstract, and dependent for its development on time and circumstances, we are hardly disposed to quarrel: but we can only explain it as the effect of that sort of strabismus, which, on particular subjects, sometimes distorts the eyes of politicians, otherwise clear-sighted enough, that he should have looked for

\* This expression has ever since been a bye word in Persia. Diplomatic etiquette of course did not admit of its appearing "*toutidem verbis*" in our treaties with the Shah; but the idea, which it embodies, forms the very basis of all these treaties; and we hardly understand, therefore, why our nerves should have been so greatly shocked, when Dost Mahommed Khan was reminded by his agent at Teheran, that he held a turnpike lower down "*the road*."

the approach of the danger *by sea*, and that his line of sight should have been still more strangely diverted, from the Caspian, to the Persian Gulf. Such, however, was the case. He seems to have had a sad misgiving that the French—notwithstanding that they were subjected by his treaty to a perpetual ostracism from the Persian soil—would still establish themselves on the shores of the Gulf, and would thence launch their victorious navies against the coasts of India; and he accordingly proposed seriously, that we should obtain the island of Kishm from the Shah, and should there construct a fort, which, if not “hewn out of a mountain” like Gibraltar, or “cradled in a crater” as at Aden, should at any rate, be so strengthened by all the means and appliances of modern science, as to present a formidable obstacle to any enemy. In a military point of view, this fort was to be a “*tête du pont*” to the Bombay Harbour. Commercially, it was to revive the extinct glories of Siraf and Ormuz. Politically, it was to give confidence to Asia, while it frowned, like “Castle Dangerous,” upon Europe.

It was in vain that Mr. Harford Jones, to whom Capt. Malcolm submitted his lucubrations, objected that France must overrun Syria, Assyria, and Mesopotamia, before she could approach the Persian Gulf; that she must hold those countries as a conqueror, before she could pretend to fit out an expedition against India; that, if she did really contemplate so gigantic an enterprise, she was in a better position for making the attempt from the Red Sea, than if she were in possession of Bushire and Bussorah; inasmuch as the naval resources of Egypt were fully equal to those of Arabia and Persia, while Suez was much nearer, than the mouth of the Euphrates, to her European base. It was in vain that the fallacy was exposed of ever again forming a great commercial emporium in the Persian Gulf; Vasco de Gama, when he doubled the Cape, having given the death blow to this once famous line of traffic between the East and the West. It was in vain that the resident at Bagdad, with a sagacity that has never been acknowledged, and the full value of which remains yet to be realised, pointed out the true point of danger to our Indian Empire at Asterabad; “the line of least resistance” lying between the Caspian and the Indus. Captain Malcolm was not to be disabused of his crotchet; he sturdily defended his thesis, and sent in a report of one hundred and eleven paragraphs to Lord Wellesley on the subject, supported by supplementary arguments extending to some fifty paragraphs more. This portentous document, however, happily miscarried: the minutes of the Calcutta Council Chamber stifled the monster in its birth; and, although Malcolm

again attempted to vitalize the embryo in 1810, and certain abortive measures, such as the expeditions of 1817 and 1820, and the occupation of Karrack in 1838, may be indirectly traced to the same germ, the only actual emboliment at the present day (and that a mere faint shadow of the original idea) is to be found in our naval station at Bassidore.

We must now take a rapid survey of that phase in our Persian policy, which we have before mentioned, as one of complete isolation. For several years succeeding Captain Malcolm's mission, the affairs of Persia excited but little interest in India.\* The violent effort we had made in opening an alliance was followed, as usual, by the reaction of langour. The Gallo-phobia had been lulled for a time by the ill success of the French in Egypt, and the dispersion of Perron's battalions. Danger from beyond the Indus no longer scared us; for Afghanistan was torn asunder by civil war, and Runjeet Singh had founded a kingdom in the Punjab. Although, therefore, we continued to receive intelligence from Telicran by the way both of Bagdad and of Bushire, and although we thus learnt that Persia was sinking gradually before the power of Russia, and that France had offered assistance to the Shah, we made no attempt whatever to preserve the influence that Capt. Malcolm had created, or even to require an observance of his treaty.

Persia in the mean time, was suffering grievously. She lost in

\* We must compress into a note the leading features of the Persian question in regard to India during this period. A certain Haji Khalil Khan was dispatched from Persia to India, immediately on Captain Malcolm's retirement, to pay the compliment of a return mission, and to arrange for the ratification and interchange of the treaty. This individual, however, lost his life at Bombay in 1802, in an affray between his servants and the guard of sepoys who were acting as his escort. Much embarrassment ensued, but ultimately, liberal pensions having been provided for the relatives of the deceased, and full explanations having been tendered on the part of the Indian Government by Mr. Mansel, the Company's Resident at Bassorah, who took upon himself in 1804 to proceed to the Persian Court for the purpose, the event was passed over as the inevitable stroke of "fate." We do not believe that any ill-feeling to us was awakened amongst the Persians generally by so untoward an affair: in fact a saying is on record of the minister of Shiraz, that "the English might kill ten Ambassadors, if they paid for them at the same rate," in allusion to the princely pensions settled on the family. There was an individual, however, who caused us considerable trouble in the sequel: Mirza Nohi Khan, the brother-in-law of the ambassador, having been named administrator of the estate, conceived the idea of turning the accident to his private account. By enormous bribes to the Persian Court he obtained the appointment of an ambassador for himself, and after much delay came down to India in 1805, not exactly to fill his relative's place, but to exercise the triple functions of minister, merchant, and claimant of blood money, which he roundly assessed at 20 lakhs of Rupees. It is probable, nay almost certain, that his political mission, which mainly related to a requisition for aid against Russia, would have failed under any circumstances, for the question was before the Home Government, and in the mean time the Indian authorities were powerless to act; but it is also certain, that his arrogant language, his extraordinary pretensions, and the anomaly of his triple character, contributed in no small degree to bring about the indifferent reception and frigid replies, with which he was greeted by Sir G. Barlow, on his arrival at Calcutta in March 1806. He returned to Persia "re infectâ," and found the French already established there.

succession to the indefatigable Zizianoff, Mingrelia and Ganjeh, Shekee, Shirwan, and Karabagh. In 1801, she fought her first pitched battle with a Russian army near Erivan, and, of course, sustained a defeat. When overtures were made by France in 1802, proposing the co-operation of a French and Persian army against the Russians in Georgia (all territorial acquisitions to be divided between the contracting parties, and resident French Agents to be established immediately at Teheran and Erivan), they were coldly received.\* Mirza Buzurg, indeed, emphatically

\* These letters were delivered by a certain Shahrokh Khan, who had travelled to Paris on his private affairs, and had met with much attention from the French authorities. They were generally believed at the time to be genuine documents; but circumstances subsequently transpired which led to a suspicion of their having emanated from a certain clique of diplomatic subalterns, who, under the name of "Consular Agents," remained in Syria after the French evacuation of the country, and who continued for many years to pursue a restless course of political adventure, spreading in the sequel a perfect net work of intrigue over the whole face of Western Asia. These parties, at any rate, led on by those veterans of the Levant, the Outreys, the Rousseaus, Pontecoulant, and the Coranges, were found pushing their "antennæ" into Persia, almost immediately subsequent to the presentation of Shahrokh's letters; and it was in pursuance of their counsels and through their agency, that, in the autumn of 1801, when the Shah was encamped near Erivan, a second communication, formally authenticated, was addressed by the Government of France to the Court of Persia, which claimed, in virtue of a certain treaty concluded with Shah Abbas, (a treaty, however, that we do not remember to have seen otherwise noticed in history,) a prescriptive right of alliance between the two countries, and which proposed that the Shah and the Emperor should act cordially together against Russia. As France and Russia were at this time ostensibly on terms of friendship, the sincerity of the proposal seems to have been suspected. The Shah, moreover, had already applied to the British Cabinet, through the Resident at Bagdad, for support on the European side; and he was about despatching an Ambassador to India to solicit armed interference in his behalf. The French overtures, therefore, without being offensively or even decidedly rejected, were, for the time being, quietly laid upon the shelf.

In the summer of the following year (1805), war having in the mean time broken out between France and Russia, Colonel Romieu appeared in person at Teheran, accredited under the hand of the Emperor: he was accompanied by a respectable suite, and was the bearer of handsome, if not of splendid, presents: his proposals, too, were sufficiently explicit. If Persia would repudiate the British alliance, which could not avail her against Russia, and would connect herself with France, the Emperor would at once send a Resident Minister to Teheran, would subsidize the Persian troops, and throw an auxiliary army into Georgia. The Shah, who at the first audience of the Colonel had merely counterpoised three questions: "How are you?" "How is Buonaparte?" "What made you kill your king?" wavered, when he heard of a subsidy and an auxiliary army in Georgia. Would the English fulfil his expectations? Would they abide by the stipulations of the Mulcown Treaty, which was offensive and defensive, the friends of one country being the friends of the other, and the enemies of one country the enemies of the other? These were the questions which His Majesty again referred to Bagdad, and, pending an answer to which, he was still resolved to avoid committing himself with France. In the mean time Colonel Romieu died at Teheran; and further negotiations being deferred until the arrival of a Mow. Robie, whom it was intended to send out from Paris in an ostensible diplomatic capacity, Sir Harford Jones availed himself of the respite thus afforded, to write soothing and hopeful letters to the Shah, and ultimately to proceed in person to Constantinople, for the double purpose of awakening the King's Ambassador to a sense of the critical state of affairs in Persia, and of explaining the anomalous position in which we were placed in regard to that country, by the conflicting interests and the independent engagements of the Home and Indian Governments. In the spring of 1806 the Shah must have received intelligence of the expected result of Muza N'ci Khan's negotiations in India. The Governor General had left the question of protecting or supporting Persia against Russia for the exclusive consideration of Downing Street; and as his Majesty's ministers had been now for full two years de-

wrote, that "if Buonaparte in person came to Teheran, he would be debarred admission to the centre of the universe," and, as the ink of the Malcolm Treaty was scarcely then dry, this was no very surprising trait of constancy, even for a Persian. By degrees, however, the Minister's coyness wore off. French agents were admitted in 1805 to reside in Persia, and were even treated with distinction; and when the application, addressed from Teheran direct to the Government of India in 1806, seeking for support against Russia, entirely failed—owing amongst other causes to Sir G. Barlow's strict adherence to the principle of non-intervention—the star of France rose rapidly in the ascendant.

It has been asserted, by one who might be supposed to be

liberating on the question, without venturing to come even to an approximate solution, the Shah could not help regarding this shifting of responsibility at the last moment from the only quarter whence substantive aid could be afforded, to the same shadowy, silent oracles, as equivalent to a determination to avoid interference. In the first bitterness of disappointment letters were addressed to Napoleon, and confided to Mour. Outrey, a French Dragoman, who had remained at Teheran after Colonel Romieu's departure; but as this gentleman travelled leisurely by the route of Bagdad to Constantinople, he had hardly reached the latter place when he was overtaken by an Ambassador appointed by Fath Ali Shah to repair to the camp of the Emperor. This was the adventurous Mirza Reza, who afterwards concluded the treaty of Finkenstein; and the instructions with which he proceeded on his mission were dexterously conceived and not unskilfully executed. In these instructions, so far from appearing as a suppliant, the Shah adopted the tone of an equal. No undue apprehension was expressed of the power of Russia. On the contrary she was spoken of as an antagonist of ordinary calibre, "equally an enemy of the Kings of Persia and France, and whose destruction accordingly became the duty of the two Kings. France would attack her from that quarter; Persia from this." Then followed a golden pill for the Emperor, "If the French have an intention of invading Khorassan, the King will appoint an army to go down by the road of Cabul and Candahar." But the Ambassador was thus warned in conclusion,—"If the French require a station or port in the province of Fars for their passage to Hindustan, do not consent; but say that, when a respectable confidential person is established at the royal residence for the consummation of friendship between the States, the proposal will be considered."

Nothing could have been more opportune for Napoleon than this communication: he had just fought the doubtful battle of Eylau, and was casting about for new allies against the only power which had yet been able to arrest the march of his legions. A preliminary treaty accordingly was formed without delay, and almost at Mirza Reza's dictation, and Mour. Jaubert was at once sent off to Teheran to announce the terms agreed on, and to hold the Shah firm to his new alliance. A few months subsequently, when the convention of Tilsit had entirely altered the relations between Russia, France, and England, General Gardanne was accredited to Persia with instructions very essentially modified from those issued to the Agent who preceded him, and far less satisfactory to the Shah. The treaty of Mirza Reza, who accompanied the General, was barely noticed, or at any rate it was only so far admitted to be in force, as it concerned the exclusion of the English from Persia, and the hostile designs of the French against British India. The armed opposition to Russia, which had been especially provided for in Mirza Reza's draft, was rendered impossible by the peace of Tilsit; and the Shah, being now committed to the new alliance, was fain to accept of mediation in its stead.

We have been thus particular in describing the origin of the French connexion with Persia, as all the historical notices we have seen upon the subject are deficient either in veracity or fullness; and as Sir John McNeill even, who ought to have known better, has, in his Persian pamphlet, (*Progress of Russia in the East*, pp. 50-62), confounded the different missions in a manner which furnishes a graphic picture but which is correct neither in outline nor detail.

competent to give an opinion on the question, that the Governor General's rejection of this application for assistance was a clear "casus fœderis;"\* but, in the received language of history, the odium of broken faith rests altogether with the Shah; and Sir John McNeill, indeed, affords an apology, but no defence, when he says, "that Persia, losing all hope of support from her old ally, had no alternative but to throw herself into the arms of France." Upon whichever party, however, may rest the responsibility of those proceedings which led to the mission of Mirza Reza, the return mission of Monsr. Jaubert, and the conclusion of a treaty between France and Persia at Fœnkestein in 1807,—no sooner was it known that General Gardanne had been appointed to Teheran, and that French officers might be thus expected ere long to obtain a control over the military resources of the country, than the authorities in Downing Street and Calcutta appear to have awoke almost simultaneously to a sense of danger.

It is currently believed that at the conference at Tilsit, the Eastern question in its full extent was discussed between Alexander and Napoleon, much in the same spirit as the Turkish question had been previously treated by Catherine and the Emperor Joseph. There were formidable impediments, it is true, to a partition of the East between two such powers as France and Russia, not the least of which must have been the difficulty of apportioning the rich prize to be acquired from England; but it may fairly be presumed, that when Napoleon destined the most able and distinguished of his brotherst† to fill the post of Ambassador at Teheran, he not only really entertained the idea of contesting, with more or less activity, British supremacy in India, but expected the Emperor Alexander to aid in the design. It seemed therefore to be time, when Persia, sulky through disappointment, threatened to place herself a passive instrument in the hands of France, that the British Government should bestir itself; but supposing even this result to have been as imminent as our fears led us to imagine, whether the means employed were the best calculated

\* "Letter on the present state of British interests and affairs in Persia, 1838, by Harford Jones Brydges," page 6. Sir H. Jones always maintained the principle, that, as our alliance with Persia was offensive and defensive, the Russian occupation of Mingrelia, Karabagh, &c. was equivalent to an attack on our own dominions, and required to be resented accordingly. It must be remembered, however, that the offensive and defensive article of the Malcolm Treaty referred particularly to the French, and was so understood and admitted both by the English and Persian plenipotentiaries. The validity moreover of the treaty in question was, as has been before observed, open to dispute.

† Lucien Macdonate. See "Progress of Russia in the East," page 60.

to avert the danger, is a distinct and much controverted question.

We have said advisedly that Napoleon entertained the idea of contesting our supremacy in India:—such an idea indeed was a necessary element in his design of universal empire—but we are far from intending to commit ourselves to the popular opinion that we were, either then or at any future time, exposed to the actual danger of an armed European invasion. Among the visions which the Emperor displayed to Alexander at Tilsit, and for which he sacrificed so many substantial interests, we have heard of one proposing the simultaneous march of a French and Russian army, which, combining in the plains of Persia, should operate against our Indian frontier.\* It is further known, that Sebastiani endeavoured to obtain permission from the Porte, that the French troops destined for the expedition should pass by Constantinople, and we have little doubt that Gardanne's principal instructions in his Persian Embassy referred to the same subject; but it is also notorious, that in spite of Mirza Reza's engagements, the project from the commencement found no favor with the Persian monarch, and that a very short experience of the Persian character and of the state of the relations of the Court with Russia, sufficed to convince Gardanne, not only of the impossibility of a tripartite alliance, but of the extreme difficulty of persuading the Shah to admit the presence in Persia of an auxiliary army of any European nation whatever. The utmost that the General could have achieved, if he had fulfilled Napoleon's promise of inducing Russia to relinquish to the Shah all her recent acquisitions in Georgia, and if he had thus obtained a place, dominant and permanent, in the Councils of Teheran, would have been the direction of a Persian expedition towards the Indus led by European officers; and we may safely venture to predict what would have been the fate of such an army, when brought, after its toilsome march, face to face with the veterans of Deig and of Laswarrie, who then guarded our north-western frontier.

Such, however, was not the light in which the Russo-French coalition was viewed at the time. An alarm, exaggerated by the vagueness of the danger, was suddenly called into existence, and measures of defence were taken, which, with the usual un-

\* We find the project thus described in an official document of the period, drawn up at Vienna, and circulated "by authority:"—"Bonaparte saisit adroitement l'occasion de la paix de Tilsit pour engager Alexandre d'envoyer une armée le printemps prochain en Perse, qui s'uniroit avec une armée Française qui devait passer par Constantinople et l'Asie Mineure, et de là, traversant la Perse, organiser les troupes que la Cour d'Ispahan devait donner pour sa part, et commencer quelque acte hostile contre les possessions de la Compagnie des Indes."

towardness of sudden impulses—an untowardness, indeed, that in regard to Persia seems to operate with a sort of fatality—almost brought the Home and Indian Governments into collision. The British ministry, judging Persia, at war with Russia and courted by France, to come within the legitimate range of European diplomacy, appointed Sir Harford Jones, who had lately returned from Bagdad, to be Envoy Extraordinary from the Crown, and sent him out in October 1807, with a commission which placed him in subordination to the Governor-General, but with full powers to conclude a direct treaty between the Shah of Persia and the King of England: while Lord Minto, either mistrustful of the Agent, or deeming affairs too critical to await his tardy arrival by way of the Cape of Good Hope, and dissatisfied also with the interference of the Crown in arrangements, which had hitherto been under the exclusive direction of the Indian Government, and the expenses of which moreover required to be defrayed from the Indian Treasury, nominated his own officer, Brigadier General Malcolm, to the same duties that had been confided in London to His Majesty's Envoy. We will not follow the details of the unseemly contest that ensued, although an instructive lesson might be drawn from them. We must confine ourselves to results, and to the general questions of policy involved in them. General Malcolm, who was allowed the initiative in this singular diplomatic combat, had no sooner arrived in the Persian Gulf in May, 1808, than, agreeably to his instructions, he opened trenches against the French position at Teheran. But Gardanne was then basking in the full sunshine of Court favor: he had given something, promised much, and led the Shah to hope for more; he was pleading earnestly to Russia for forbearance: his engineers were constructing fortifications: his officers were disciplining the Persian troops: and, although the British Envoy resorted freely to his old strategy of a golden influence, and fairly offered to buy the French out of Persia, he found it impossible to make any way. A discomfiture, so signal and so unexpected, seems to have obscured the General's judgment, as much as it shocked his vanity. Without considering the causes of his failure, or duly weighing its probable effects, or even seizing upon an eligible remedy, he indignantly quitted the shores of Persia, "breathing reproach, defiance and invasion."

We doubt if General Malcolm was guilty of greater blunders in his dealings with the Peishwa in 1817-18, than he committed in his abortive mission to Persia in 1808. It required no extraordinary penetration, one would think, to have perceived

that at the period in question money could possess for Persia but a secondary attraction. Self-preservation was her leading instinct; and whichever power, France or England, could offer her the best chance of protection against her gigantic adversary, Russia, must, of necessity, have had a preference in her Councils. Undoubtedly the "auri sacra fames" was the prevailing vice of Futtch Ali Shah's character, and he had been taught, moreover, to make the jealousy of the European powers subservient to the gratification of his avarice; but what to him was "all the wealth of Ind," if at the same time a Russian army occupied his capital? As the overtures made by Persia to Napoleon were mainly owing to the unwillingness or inability of the Governor General of India to adopt any measures for placing a check upon Russian aggression, so did Gardanne maintain his ground against English gold by persuading the Shah, that in French mediation lay his only safeguard against absorption by his northern neighbour.

The more extended also the view that may be taken of the Persian question, the less favorable will be the light in which General Malcolm's proceedings must appear. If it be admitted (and there can be few dissentients, we think, at the present day), that a tripartite alliance between Russia, France, and Persia, for purposes hostile to British India, was beyond, and that the march of a Russo-French army to the Indus, in defiance of Persia, or without her assistance, was barely within, the range of possibility, the alarm excited by Gardanne's establishment at Teheran must appear quite extravagant. To us it seems, that if the French had really strengthened Persia against further encroachment on the part of Russia, either by treaty, or by placing her in an improved state of military defence, they would have rendered us a service of far more real consequence to our Indian Empire, than any dangers arising from their own hostility or intrigues: while, if they failed in that object, which had alone given, and could alone give them consideration at the Court of the Shah, they were powerless to injure us. But if the rejection by Persia of the British alliance is thus shown under the circumstances to have been not only natural but necessary, and if the consequences of that rejection are also shown to have been altogether misunderstood, what are we to say to General Malcolm's proposed remedy of invasion? It is affirmed we know of

"A spaniel, a wife and a walnut tree,"

"The more you beat them, the better they be:"

but really we never remember (except perhaps at Navarino) to have heard the proverb applied to international friend-

ships. To have expected to regain the lost affections of the Shah by force of arms seems to us to have been very like fatuity. To have actually carried that design into execution would have been of positive injury to our ulterior interests. If, indeed, General Malcolm had landed a British force on the shores of the Gulf, and had succeeded, by a diversion in the south of Persia, in driving the French from Teheran, he would have aggravated, instead of alleviating, the only real danger that threatened us. That danger was, as it ever had been, and ever will be, the gradual extension of the Russian power and the Russian territory, and it would have been augmented precisely in the same proportion as Persia was weakened or divided.

The proverbial "Ikbal," however, of the Honorable Company at this time stood us in good stead. Sir Harford Jones, who had been impatiently watching the progress of General Malcolm's negotiations, no sooner learnt their unfortunate and even dangerous issue, than he stepped forward with too much perhaps of ostentation, but with undeniable boldness and address, "to throw the *Ægis* of the British Crown over the imperilled 'destinies of India.'" Without entering on the vexed question, whether the affairs of Persia came properly and naturally under the political jurisdiction of Great Britain or of India, we may observe that, as Sir Harford had been placed by the letter of his commission in subordination to the Governor-General of India, and as all arrangements to which he might pledge the Government that he immediately represented, must have depended for their execution on the same authority, it evidently required strong and exceptional circumstances to justify his pursuing in any degree an independent course of action. His proceedings however were not merely independent, —they were in direct antagonism to the declared policy of his predecessor, which had already received Lord Minto's approval; and we suspect therefore that success, even in the general object of his mission, would not have carried him scathless through his perilous adventure, had not the situation appeared to those who were ultimately called on to decide upon his conduct to have been otherwise desperate.

We will now give a brief sketch of his really remarkable career. Arriving at Bushire in October 1808, he found that General Gardanne had overplayed his game, and that a "reactionary" tendency was setting in against the French. The idea therefore occurred to him to propose England, instead of France, as the power which should protect Persia against the great Northern Leviathan, and time and circumstances both favoured the substitution: for as the French, in their early efforts to

undermine British influence at Teheran, had been careful to instil into the minds of the Shah's ministers, that the enemy of Russia could be the only natural ally of Persia, and as by force of iteration this doctrine had now come to be received almost as a maxim of international policy; so when Sir Harford revived the argument, (*"fas est et ab hoste doceri"*) he obtained a ready—almost an anxious—hearing; and when he further urged its practical application, he had the satisfaction of finding that not only did the precept recoil upon the French, but that the recoil was doubled in effect by experience having proved in the interim the folly of trusting to the feeble powers of mediation and good offices in dealing with such an enemy as the inexorable Czar. So effective indeed was the "coup," that little more remained for diplomatic handling, and that little was accomplished by the Envoy's personal friendship with the Persian ministers, and by the "prestige" which he enjoyed as the direct representative of the British King. He advanced in a sort of ovation to the capital, General Gardanne retiring on his approach, and Monsieur Jouannin, the Secretary, who still clung with a leech-like tenacity to the court, being fairly eclipsed by the rising luminary. A "pourparler" then ensued, not less remarkable for its brevity than for the importance of the matters discussed; and in March 1809, was concluded the Preliminary Treaty, which, in spite of much Procrustean manipulation sustained during an interval of forty years, continues in force to the present day as the basis of our Persian alliance.

With the tone and spirit of this treaty little fault has been ever found, but its particular engagements, distasteful in many quarters at the time of their conclusion, have provoked criticism ever since. Approbation could never have been withheld when the temperate language of a treaty, which secured the full advantages at which it aimed without a single offensive, or even invidious, allusion to a foreign power, was compared either with those requisitions of 1801, that we have already blazoned in their true Chinese colors, or with certain subsequent stipulations of Mr. Elphinstone's at Cabul, still more preposterous in founding on a preamble absolutely fictitious;\* but in spite of

\* In the 3rd article of Sir H. Jones's treaty, it was expressly provided that "from the date of the preliminary articles (March 12th, 1809) every treaty or agreement which the King of Persia might have made with any one of the powers of Europe became null and void, and that he would not permit any European force whatever to pass through Persia either towards India, or towards the ports of that country."—Yet three months subsequently (June 17th, 1809) Mr. Elphinstone assumed that "the French and Persians have entered into a confederacy against the state of Cabul," and then went on to engage, that "if the French and Persians, in pursuance of their confederation; should advance towards the King of Cabul's country in a hostile manner," such and such measures should have effect.

the contrast thus presented—in spite of the testimony afforded by it to the favorable character of Sir Harford Jones's general diplomacy—when the expulsion of the French from Persia has come to be weighed against the heavy liability of a permanent subsidy, and the inconvenience of being committed indefinitely to a state of quasi-hostility with Russia, a question has arisen whether the British Envoy did not over-estimate the value of the Shah's alliance,—whether in fact he did not make us “pay too dear for our whistle.”

Having already recorded our opinions on the real nature and tendency of the French connexion with Persia, we may leave our sentiments to be inferred on the particular question of the penalty thus gratuitously incurred for its disruption; but it is important to observe that a verdict, however unfavorable on the score of expediency, does not by any means reflect on Sir H. Jones's individual judgment or discretion. That Gardanne should be expelled from Persia was a settled thing before hand, and the agents employed in the transaction had merely therefore to decide whether the end in view was to be attained by force of arms or by persuasion. If by persuasion, it was indispensable to find some means of supporting Persia against Russia; and really under the circumstances we doubt whether any could have been devised less onerous to England, or more likely, on a “prima facie” view of the case, to advantage the Shah, and to contribute to our own strength, than those which imposed upon the Indian Government the obligation of furnishing a subsidy, with arms, ammunition, officers, and artificers, to be employed against the common enemy. The best reply indeed to the charges which have been brought against Sir Harford Jones—that “he ignominiously purchased the protection of Persia for England;” that, “he saddled the Indian Government with a useless and extravagant debt, &c.,”—\* is to be found in the fact that Lord Minto, who regarded his personal proceedings as actually mutinous, who by anticipation repudiated

\* See Taylor's History of British India, p. 227. Sir Harford Jones has been mercilessly treated by the majority of writers upon Indian History. A certain doctrine, which he had not only the merit to discover, but the boldness to avow, and the sense to act upon—namely, that the Governor General was incompetent to conduct political relations on a footing of equality at the court of an independent monarch already closely connected with the two chief powers of continental Europe—appeared so monstrous and unintelligible to Indian Officials, that unworthy motives were sought for to account for its proposition: personal vanity and private pique were currently imputed to Sir Harford at the time (we believe unjustly) as having mainly influenced his conduct, and Lord Minto penned some of his most elaborate despatches to prove the injury and inconvenience which would accrue to the national interests from conniving at a crime of *lèse-majesté* against the Governors of India. We could have afforded to laugh at His Lordship's sensibility, had it not cost us, as General Malcolm's supplementary mission, a useless outlay of between fifteen and twenty lakhs of rupees.

his possible negotiations with the Shah, disavowed his diplomatic character, and ordered him summarily to leave the country, who went the length even of dishonoring the bills drawn by him on the public service—still did not hesitate, when furnished with a draft of the treaty, and while yet in ignorance of the feelings of the Home authorities, to accept all the pecuniary and military engagements which had been contracted in the name of His Britannic Majesty, with the sole proviso that their execution should be entrusted to an officer honored with His Lordship's confidence, and prepared to uphold the dignity of the Indian Government.

It is needless to pursue this subject further. Sir Harford's importance on the page of Persian political history expires with his treaty. His singular personal fate,—the condemned and persecuted of Calcutta, the approved and honored of Windsor—may be of interest to our Indian annals, in exemplifying one of the anomalies which impede the working of our Empire in the East; but it is otherwise devoid of consequence. Let it suffice that the preliminary treaty was conveyed to England by the author of "Haji Baba," accompanied by the Persian Ambassador, broadly drawn, we can hardly say caricatured, in that inimitable story; that it was duly ratified and exchanged, and that it came into operation with all convenient despatch. We must pass over with equal rapidity General Malcolm's resumption of his functions in 1810; for however rich in scientific results may have been the labors of the General and his suite,\* and however willingly we may concede to such results a value superior to the most brilliant diplomatic services, we are fain to confess that, as far as regards the question of our political relations with Persia, we have failed to discover a single vestige of effect, proceeding from so expensive and well appointed a Mission. A limited supply of military stores, in fulfilment of Sir Harford Jones's promise, and the transfer of a few officers who accompanied the Escort, to the service of the Heir Apparent, then sedulously occupied with the formation of a regular Army, give a certain "eclat" to the General's visit, and furnished a not ungraceful epilogue to the previous drama; but we cannot persuade ourselves to believe that Lord Minto's object in sending the Mission to Persia was in any way realized. This object, which was nothing less than "to restore and secure the injured credit and insulted dignity

\* It must be remembered that to this Mission we are indebted for "Pottinger's Travels in Beluchistan;" for the journals of Grant and Christie; for Macdonald Kin-  
 nier's "Geographical Memoirs;" for the "Sketches of Persia;" and for Sir John  
 Malcolm's elaborate History,—a series of works, which not only filled up an important  
 blank in our knowledge of the East, but which materially helped to fix the literary cha-  
 racter of the Indian services.

of the Indian Government,"\* (or, in other words, to teach the Shah, that, in all matters which regarded the Persian connexion, the Governor General was the equal of the King of England) we consider to have been neither practicable, nor desirable. We believe indeed, that if the Shah had been really mystified by General Malcolm's pretensions, and if he had been thus again led to confound colonial and imperial responsibility, a confusion, which involved a positive error in political ethics, and which was constantly liable to bring on embarrassments of the gravest character, would have required, sooner or later, to have been set right by an explanation still more disparaging to the Indian Government. Fortunately the unambiguous language and the consistent measures adopted by His Majesty's Ministers left no room for misapprehension. While General Malcolm's mission was ignored, or at best regarded as a mere complimentary pageant, Sir Harford Jones, after the ratification of his Treaty, was confirmed in the post of Resident Minister at Teheran; and on his voluntary retirement in 1811, an officer of even higher rank—of the highest rank in fact in the diplomatic service—was a second time accredited from the Court of Saint James's to watch over our interests in Persia.

At this point of our narrative it is important that we should understand what those interests really were, and how we were disposed to view them. Hitherto we have seen our Persian relations based on two principal objects, the establishment of a counterpoise to the power of the Affghans, and the neutralization of French ambition, both the one and the other of these objects referring immediately to the defence of India. The Russian element has hardly entered into the question. Although in fact we knew that, as early as 1791, the invasion of India by a Russian Army marching from Orenburg upon Bokhara and Cabul had been planned by Monsr. de St. Genie, and had actually occupied the attention of Catherine; although we were acquainted with various memoirs (among which may be noticed those of Monsr. Brutet and Monsr. Pavillon, French emigrants of Petersburg and Moscow, and especially a really clever "brochure," drawn up by Le Marquis Beaupoil St. Aulaire, Private Secretary to the Hospodar Ispahanli,) which had been addressed to Alexander about the period of the peace of Tilsit, and which foreshadowed much of that policy that has since been practically carried out in Central Asia, we do

\* This is quoted from Lord Minto's despatch to General Malcolm of October 26th, 1809—a despatch, of which the strong expressions and uncompromising tone could hardly have been exceeded by Lord Ellenborough in the plenitude of his independence. Sir Harford Jones's appointment from the Crown is termed nothing less than "a solecism in the system of diplomatic delegation."

not seem up to the period of Sir Harford Jones's treaty to have had any clear conception of danger from the vicinage of Russia, or any strong desire to keep her at a distance. We had looked on the war in Georgia as a mere local arrangement; and the question of supporting Persia in that war had been debated and recommended on the exclusive ground of the superior influence we should thereby secure ourselves at the Court of the Shah. There was a disposition at the outset to estimate Sir Harford Jones's engagements by the same factitious standard of value, rather than in reference to their possible efficacy in resisting Russian encroachment. It was not indeed until our officers at the head of the Persian battalions were actually brought into contact with Russian commanders in the field, that we began to notice the formidable power that was growing up in our neighbourhood, and to speculate on its further development. A cursory survey exhibited to us upon one side the appearance of immense military strength, the lusty energy of awakened civilization, and a certain consistency of movement, which seemed to point to geographical extension as a necessary law of existence. On the other we beheld, or we thought that we beheld, a nation in the last stage of decrepitude, subject to convulsive throes which gave for the moment an unnatural vigour, but bereft of moral confidence, and verging on that state which precedes dissolution. That Russia had been formerly desirous of obtaining a position in Central Asia, which would have brought her into inconvenient proximity with India, was attested by her expedition against Khiva in 1717; by her occupation of Ghilan in 1724, and again in 1796; and by her attempted settlement at Asterabad in 1781. That she was still bent on the same object—substituting however, for isolated conquest, the surer process of gradual territorial absorption—was inferred from the pertinacity with which she had now for twelve years prosecuted a war with Persia, that could not by possibility secure for her any immediate advantage, at all commensurate with its expense. Such being her power, and such being her purpose, it was judged that unless we interposed to check her progress, many years could not elapse before, in the natural course of events, Russian troops would garrison cities in Khorassan, within 700 or 800 miles of the Indus; and this prospect, once opened to our view, was sufficient to arrest and fix our attention. The probable consequences of such a dislocation of the map of Asia were differently contemplated by men of different temperaments. Visions of invasion floated before the eyes of the excitable; while practical statesmen were content to weigh the amount of disturbing influence, which the neighbourhood

of a new mass might be expected to exercise on the still oscillating bodies of the Indian system. This problem was undoubtedly a difficult one to solve, for it depended altogether upon unknown quantities; but it nevertheless furnished the data upon which the expediency was admitted, and the amount was calculated, of the subsidy to be supplied to the Shah. The integrity of Persia was declared to be worth just so much to us, as it would cost us to counteract the disturbing influence of Russia, if impinging on our frontier; and from ten to fifteen lakhs of Rupees of annual outlay being considered a moderate estimate for the expenses which a mere state of preparation would entail on us, it was determined to apply something like that amount to the formation and support of a Persian army. It must be seen however that in thus reducing to a tangible form the value of our interests in Persia, and in proceeding to realize that value, there was a begging of the question upon two points. We jumped, in the first instance, to a conclusion of the imminency of a Russian occupation of Persia, and we arbitrarily assumed in the second that certain means would produce certain ends; that is, that the integrity of the country might be preserved through the instrumentality of a native army. It is now tolerably certain that we were wrong both in the one assumption and in the other. It can be proved, we think, that whatever benefit Persia may have derived, as far as regards the centralization of the power of her monarch, from the introduction into her armies of European discipline, she has been, as a substantive power, progressively weakened by the change, and rendered less capable of sustaining a pressure from without; and it follows therefore that if she had been in danger of absorption by Russia under the old system, she must long ere this have ceased to exist under the new.

It would detain us too long to explain in detail the seeming paradox of discipline engendering weakness. If it be remembered, however, that when the system is affected with chronic paralysis, the attempt is vain to restore any particular member to a healthy action, it will be understood that to a nation devoid of organization in every other department of Government, a regular army was impossible. It thus happened that, notwithstanding the admirable material for soldiery which were offered by the hardy peasantry of Azerbaijan and the still hardier mountaineers of Kermanshah—notwithstanding the aptitude of the officers to receive instruction—notwithstanding that a due portion of physical courage appertained generally to the men—the disciplined forces of Persia, considered as an army, and for the purpose of national defence, were from the

epoch of their first creation contemptible. Beyond drill and exercise, they never had any thing in common with the regular armies of Europe and India. System was entirely wanting, whether in regard to pay, clothing, food, carriage, equipage, commissariat, promotion, or command; and under a lath-and-plaster Government like that of Persia, such must have been inevitably the case. At the same time, however, a false confidence arose of a most exaggerated and dangerous character; the resources of the country were lavished on the army to an extent which grievously impoverished it at the time, and which has brought about at the present day a state of affairs that, in any other quarter of the world, would be termed a national bankruptcy; above all, the tribes,—the chivalry of the Empire, the forces with which Nadir over-ran the East from Bagdad to Delhi, and which, ever yielding but ever present, surrounded, under Aga Mahommed Khan, the Russian armies with a desert—were destroyed. Truly then may it be said that in presenting Persia with the boon of a so-called regular army, in order to reclaim her from her unlawful loves with France, we clothed her in the robe of Nessus.

Although it is thus certain that Persia was not saved from the grasp of Russia by any additional strength that we imparted to her, and that in supplying her, accordingly, with a subsidy, our treasures were unprofitably wasted, it is not to be supposed that we were under a delusion, either in judging of her feebleness as a nation, or in assuming an aggressive tendency as an inherent element in her antagonist's policy. Our error lay in giving an undue extension to the operation of that tendency—in over-estimating, in fact, the offensive power of Russia. We were wrong in including the East and West in the same category; in believing that Persia might be annexed with the same facility as Courland and Finland—that she could be suddenly dismembered and occupied like Poland, or cajoled out of her independence like the Crimea—that she might be over-run like Bessarabia, or even subdued like Georgia.

At that time, it is true, the opportunity had not occurred for verifying to its full extent a certain remarkable analogy between the natural and moral laws of the Russian Empire—an analogy which has been casually touched upon in the saying that “her slope is to the East,” but which will admit of still happier and more forcible illustration; for it may be added with equal truth that, as her rivers torrents at the fountain-head slacken in their onward course, until at length they roll lazily through endless steppes, and stagnate in the Caspian marshes, so do her means and forces, although tending naturally to the East,

become attenuated at the extremities of the Empire till their effects are barely sensible.

We had not then seen the striking spectacle of a few isolated mountain bands (powerful because remote) setting for a long series of years her battalions at defiance, nor had we beheld an army of veteran soldiers, like that conducted by Petrowski against Khiva in 1810, annihilated by the mere passive resistance of a distant enemy; but still from the slow progress and inadequate results of the Persian war—the conquests of Russia upon this side the Caucasus in 1813, after twelve years of uninterrupted hostility, being actually of less extent than those achieved by Zuboff in the brief but brilliant campaign of 1796—we might have fairly suspected either her earnestness, or her ability. To have anticipated, at any rate, for Persia the catastrophe of a sudden extinction, was to violate all probability. To have supposed her even in such danger as to justify any considerable outlay in her defence was to show that we followed the impulse of our fears, rather than the limited, though perhaps sufficient, lights of our experience. We now resume the thread of our narrative.

Sir Gore Ouseley, who reached Teheran as Ambassador Extraordinary from the King of England, in the summer of 1811, found Persia still engaged in hostilities with Russia. The officers supplied from India, Christie, Lindsay, and their gallant comrades, had already under great disadvantages formed the nucleus of a regular army, which on more than one occasion had beaten the Russians in action: but these successes were transient and illusory. The Persians owed more to the lukewarmness (if not the misconduct) of their enemies, than to their own prowess. In 1812 the reconciliation of England and Russia, which followed on Napoleon's rupture with the Czar, necessitated the withdrawal of the British officers from the battle field, and the inferiority of the Persian troops became at once apparent. It was evident, that to give the experiment of discipline a fair chance of success, a respite from war was indispensable; and as Russia had occasion for her full resources and undivided attention to shake off the gigantic foe with whom she was now grappling in the death-struggle, the good offices of England, which had been promised to Persia in the preliminary treaty, in the event of our making peace with her antagonist, were accordingly exerted with such effect, that in October, 1813, the Treaty of Gulistan was at length signed between the belligerents. This treaty was no doubt sufficiently humiliating to Persia. All the acquisitions of Russia, south of the Caucasus, were confirmed to her. It was further provided,

in the same jealous spirit which dictated the secret article of the treaty of Unkiar Skelessi regarding the closing of the Dardanelles against nations at war with Russia—and perhaps also with a view of especially alarming England (for really as far as Persia was concerned, a power whose maritime inaptitude was proverbial, the condition was not merely superfluous, but absurd)—that “no ships of war, except Russian, should be allowed on the Caspian Sea.” A want of preciseness also, either culpable or wilful, in the demarcation of the frontier at a most important point, left Russia at liberty, whenever it might suit her convenience, to force on a renewal of hostilities by occupying the disputed territory. We believe, indeed, that the peace of 1813 was regarded neither by the one party nor the other in any other light than as an armistice. Russia had no idea of accepting permanently any frontier short of the Aras (Araxes); but she was unable at the moment to push her conquests. Persia was equally insincere in affecting to have abandoned Karabagh; but she required an interval of repose to recruit her energies, and above all to improve her discipline, and gain some knowledge of European tactics.

Simultaneously with the convention of Gulistan, or immediately following it, Sir Gore Ouseley concluded with Persia, on the basis of Sir Harford Jones's preliminary arrangements, the definitive treaty which he had been especially appointed to negotiate; and shortly afterwards he returned with it to England, leaving his Secretary, Mr. Morier, in charge of the Mission. This treaty, however, was not accepted in its original form. The British Ministry, with the honest and honourable intention of doing the very best for Persia of which her situation would admit, resolved on more liberal terms of subsidy than those which the Shah's Government had already thankfully accepted; and accordingly, a special Commissioner, Mr. Henry Ellis, was sent out in 1814 to modify Sir Gore Ouseley's stipulations.

It is unnecessary that we should examine in detail, and throughout its eleven articles, the treaty of Teheran, which was concluded by Messrs. Morier and Ellis, November 25th, 1814. A brief notice of its more prominent features will suffice for our purpose, and is all, moreover, of which our space admits. In many points of view it was undoubtedly faulty to have supposed that Persia could interfere to prevent, or even to check, the movements of a Russian army marching upon India by the route of Khiva, or Bokhara, or Kokan; and to have provided accordingly, betrayed an inexcusable ignorance of political geography. There was an equal impropriety in engaging

that "the limits of the two states of Russia and Persia should be determined according to the admission of Great Britain, Persia, and Russia;" for, if considerations of the public weal, patent and emergent, be alone held to justify under any circumstances the intrusion of mediatory offices, and if an engagement to proffer such offices be thus rarely inserted in treaties between States,—to pledge a third party to accept of them does seem the very acmé of diplomatic hardihood. We will say nothing, for the moment, of the subsidy itself; but the 7th article, which stipulated for the payment of the money in as early instalments as might be convenient, "*since it was the custom in Persia to pay the troops six months in advance,*" might really be very well taken for a burlesque. The obligation, again, which we contracted in the 9th article, to abstain from interference in the event of a possible contest between the Persians and Afghans, is hardly intelligible. Such a proposal could not have proceeded from Great Britain; and, if proceeding from Persia, it indicated that desire of territorial extension which was more fully developed in the sequel, and which, when developed, compelled us upon general grounds to repudiate the treaty altogether.\* Lastly, the extradition of refugees, which we also blindly conceded, was a most humiliating, (and under the circumstances a most gratuitous) engagement;—an engagement, indeed, so repugnant to Eastern ideas of honour and hospitality, that, although the occasion has frequently arisen for bringing it into operation, we believe that means have been sought and found in every instance, if not for rejecting the terms entered in the bond, at any rate for modifying their rigour, and thus saving our credit on one side to expose it on another.

The essential points of the treaty in regard to Persia were the augmentation of the amount of the subsidy, and the definition of the conditions under which the liability of its payment was imposed on us. The annual amount was raised from 160,000 to 200,000 Tomans (or from about 12 to 15 lakhs of Rupees); and, in explanation of that article of the preliminary treaty, which merely declared Persia to be entitled to our assistance in the event of any European force invading the territories of His Majesty the Shah, our exemption from the pecuniary liability was specifically limited to the possible case "of the war with such European nation being produced by an aggression on the part of Persia."

Undoubtedly, however, the most important feature of the treaty in question was the principle which it involved, that

\* See Lord Palmerston's despatch to Mr. McNeill, dated July 27th, 1838. Correspondence relating to the affairs of Persia and Afghanistan, P. 89.

Great Britain had a right to consider any spontaneous act of Russian aggression upon Persia, as a demonstration against India. That we should really have propounded so important, and at the same time so questionable, a doctrine may well excite surprise; yet the 6th article will admit, we think, of no other construction; for by that article it was provided, that although Great Britain might be at peace with Russia, if Persia were attacked by the latter power, and if our good offices failed in bringing about an arrangement of differences, then we would continue to pay the subsidy to support the army of the Shah, or, if it were preferred, we would send a force from India to assist in repelling the enemy,—neither the one nor the other of these engagements being compatible with the duties of a neutral State, nor indeed admitting of justification, according to the Law of Nations, on any other grounds than those of *self-defence*, which grounds of course must have pre-supposed the fact of an attack on Persia being an indirect attack upon India. We were in fact by the 6th article of the treaty pledged to a possible war with Russia in defence of Persia, and, what is of more consequence, the pledge remains registered against us to the present day; for when we compounded in 1828 for the expunging of certain articles from the treaty of Teheran, by some inexplicable oversight the 6th article was not included in the obnoxious category; and it still therefore must be considered in force, as far as regards the principle involved in it, and as far as its integrity may be unaffected by our release from the other engagements.

For a considerable period, subsequent to the treaty of Teheran, our relations with Persia underwent no material change. We were pursuing two objects: one was the improvement of the military resources of the country, to which end we supplied arms, founded a laboratory and arsenal, and furnished officers for the drill and discipline of the army; the other was the creation and retention of such a commanding influence at Court, as should not only guarantee us against the possible intrigues or enmity of a foreign power, but should enable us in some degree to sway the councils of the State. In the former path, our success was hardly equal to our hopes, or even to our expectations. Our officers, it is true, displayed a most creditable zeal, and no little address in contending with the difficulties of their position: and, moreover, the Prince Royal, under whose immediate orders they were acting, seconded their efforts,—not exactly with the same ardour which had inspired him, so long as a regular army added to its substantial advantages the irresistible charm of novelty, but still with sufficient steadiness to have ensured the fashioning, according to the end in view, of any less intractable materials; yet it cannot

he denied, that when Persia again came into collision with Russia in 1826, her means and power as a military nation were positively inferior to those which she possessed at the close of her former struggle. During this long interval of thirteen years, she was continually losing ground in that quarter where her real strength lay, while she advanced in a direction where progress was exhaustive, as well as useless. If, however, in the words of Persia's most impartial historian, "the attempt to introduce an effective discipline, and to organise a regular force on European principles was a signal failure;"\* and if, in one branch of our policy, we were thus doomed to chew the cud of disappointment, in our other object at any rate we were more than successful. Nothing could have been more satisfactory or more honourable to the parties concerned, than the conduct at this period of our relations with the Court of Teheran.† Still more commendable also was the character of those general measures, by which we conquered prejudice, disarmed jealousy, and finally gained a complete ascendancy in the public estimation of the nation. To the care, indeed, with which, after the retirement of Mr. Morier, Sir Henry Willock, ably assisted by Sir J. McNeill, then a young officer on the Bombay Medical Establishment, conciliated popular opinion, rather than to the wayward prodigality of Malcolm, or the lawyer-like dexterity of Jones, must be attributed the impressions, which, surviving all party questions—surviving even the shock of wounded pride—enable an Englishman at the present day in any part of Persia, not merely to enjoy personal safety, but to command esteem and respect.

We shall not follow in any detail the relations of Russia with Persia during the interval in question. The bearing of the former power throughout was irritating and contemptuous. Unwilling, or unable, to appear as a competitor against England for the favours of the Shah, she rather sought to oppose our influence by acting on the fears of Persia—by exhibiting in fact that disregard for rights and courtesies which could be only supposed to arise from a consciousness of complete superiority. The retention of Talish, the profound indifference with which she received the repeated invitations of Persia to treat for the

\* Fraser's Persia, page 301.

† We have not forgotten that a personal misunderstanding between Sir H. Willock and the Shah led to the temporary withdrawal of our Mission from the Court; but the occasion of the rupture was so entirely accidental, and the effects of it were so transient, that we do not consider it to affect the general character of our relations during the period in question. When our transient Minister, indeed, reported himself at the Foreign Office, Canning is said to have observed "Henry Willock? I know a man of that name at Teheran, but certainly not in London," a remark which sufficiently expressed his opinion of the quarrel, and censured the undue importance that had been attached to it.

adjustment of a disputed frontier, and finally the violent occupation of Gokchah, must be imputed, we think, as much to a desire to prevent Persia from deriving strength, or even confidence, from our support, as to any real thirst of conquest, or any wish to precipitate hostilities. Russia had doubtless always looked to the absorption of the Persian territory, north of the Aras, as essential to the geographical boundaries of her Empire; and such an absorption could hardly be effected without engaging in a war: yet war was not her principal object. That object was the general depression of Persia, the rivetting of chains around her which should annihilate her powers of self-action: and it was valued perhaps less for its immediate results—less even as a movement in advance towards the final act of appropriation—than as a means of quickening the alarm of England, and thus obtaining a moral leverage against us in Europe. We have not dwelt hitherto upon this occult element of the Russian policy; partly, from a disinclination to ascribe too much astuteness to any plan of attack; partly, from the difficulty of tracing such a plan, where the batteries are masked, the approaches are tortuous, and the sap often shifts its course according to the nature of the ground. During the mission of Prince Menzikoff however to Teheran, in 1826, there was an overt attempt upon his part to commence that system of demonstration which has since so much embarrassed us; and we shall be justified therefore throughout the sequel of our sketch in assuming the probability of there being always two distinct principles of action in the proceedings of Russia against Persia,—the one, real, immediate, and acquisitive; the other, remote, artificial, and working merely by intimidation. If indeed there were any object in the mission in question, it was to give a different direction to the outpourings of the national mind, then in a high state of fermentation; to change the theatre of contemplated war from the North West to the East; to bring about through military complications in Khorassan a state of local politics, which should entirely alter the relative positions of Great Britain, Persia, and Russia, and which, whatever might be the result, would advance the interests of the latter power. The project failed for the moment, owing to the sagacity of Futteh Ali Shah, who saw through so transparent a device; \* but it has never been forgotten. On several later occasions indeed it has been brought prominently forward, and at the present

\* Menzikoff taunted the Shah with the power and magnificence of his brother potentate in Khorassan, Esau Khan, and observed that it might be necessary for Russia, in a few years more, to open independent relations with him. The Shah's pride was severely wounded, but he had the sense to reply, that he preferred the rivalry of Esau Khan to the enmity of England.

moment perhaps it as fully occupies the attention of Russia as any direct scheme of territorial aggrandizement.

In glancing at the war, which broke out even before Menzikoff had quitted Persia, and which raged until the spring of 1828, we must confine ourselves to those points in it which immediately affected us. To ascribe this war, seriously and in good faith, to the occupation of Gokchah, or to any isolated accident whatever, is to ignore altogether the relative position of the belligerent powers. In real truth it was the mere consummation of a long course of preparation and design. Russia, if not deliberately provoking the contest, had been at any rate for many years previously indifferent to the preservation of peace; while Persia, brooding over her former losses, and smarting under recently accumulated indignities, judged the time to be favorable for resenting them. As however the liability of England to assist Persia with a subsidy or an auxiliary army, depended upon the first act of aggression, the question of the initiative nearly concerned us; and a discussion therefore immediately arose, as to whether the affair of Gokchah did, or did not, constitute a "casus belli." Persia maintained that she was forced into the war by an aggression on the part of Russia, and accordingly demanded the assistance to which under such circumstances she was entitled by our engagements with her; whilst we replied—with more of casuistry, certainly, than generosity—that "the occupation by Russian troops of a portion of uninhabited ground, which by right belonged to Persia, even if admitted to have been the proximate cause of hostilities, did not constitute the case of aggression contemplated in the treaty of Teheran."\* We shall not pretend to pronounce "ex cathedra" upon a question so very nicely balanced; but, if the case had been argued in court, and if counsel had quoted to a jury, Sir J. McNeill, as a pamphleteer, against Sir J. McNeill, as a Minister, contrasting a passage from "The progress of Russia in the East," which unequivocally stated that "the war originated in a violation of the Persian territory by the Governor General of Georgia,"† with the article of the treaty of Teheran, which provided that we should be excused from payment only 'if the war might have been produced by aggression on the part of Persia,' there can be little doubt, we think, as to how a verdict would have been given. That we did not, indeed, feel that confidence in our immunity at the time, which we have since affected, may be inferred from our anxiety to obtain a release

\* Correspondence relating to the affairs of Persia and Afghanistan, page 112.

† Page 98.

from the subsidy engagements immediately that the war was terminated, as though we still trembled at the risk we had encountered, and indulged a covert hope that to the release once obtained might be conceded a retrospective effect. The actual bargain however, by which the Shah was persuaded to cancel our engagements, forms, we think, the least creditable feature in the whole "tableau" of our Persian policy. It is this bargain which we have before characterized as one of extraordinary rigour, and even of questionable honesty; and to enable the reader to see if we have judged harshly, we now present him with an outline of the transaction.

At the close of the war, when defeat and treachery following closely one upon the other had left Persia, if not so enfeebled, at any rate so disheartened, as to be ready to accept of any terms that might be imposed on her without scrutinizing their claim to moderation, Russia demanded, amongst other conditions of peace, the payment of ten crores\* of Tomans (about three and a half millions sterling) as indemnification for the expenses of the campaign. Of this enormous sum the greater portion was defrayed from the reluctant coffers of the Shah; but for the remainder the Prince Royal was rendered personally responsible, and, as the province of Azerbaijan had already borne the chief burthen of the struggle, it may well be understood that neither His Royal Highness's treasury, nor the resources of his government, were in a condition to meet the call. He had recourse to expedients—not of the most dignified character—to obtain even a temporary relief. At his earnest entreaty a small portion of the debt was remitted; a further portion, amounting to a crore, was suffered to lie in suspense: for another crore the rich district of Khoi was handed over to Russia in pledge; and a certain amount of ready money was provided by anticipating the revenues of the province. A considerable sum however was still wanting to satisfy the immediate demand, and the prince found himself accordingly compelled to accept of aid tendered by the British minister, however limited in amount, and however severe the terms upon which such aid might be afforded. We are not cognizant of the full details of the transaction which ensued;† but we believe that Sir John Macdonald in the first instance passed a bond to the Prince Royal, pledging himself to furnish a sum of 250,000 Tomans

\* The crore here mentioned is only 500,000 Tomans.

† There is a singular, and to say the least of it, a most suspicious, want of uniformity in the dating of the documents, which refer to this transaction in the published "Treaties." (Indian Papers, No. 2, page 7.) In one paper, the English date is used; in another, the Mahomedan; and the date of the third is altogether suppressed.

towards the liquidation of the indemnity, provided H. R. H. acting as the plenipotentiary of the Shah, would annul the subsidy engagements of the treaty of Teheran; and that subsequently, when the time for payment arrived, the Envoy declared that he had exceeded his instructions, and that he could only disburse at the moment 200,000 Tomans, in consideration of which assistance a formal act of surrender must be passed to him; but that he would obtain the remaining 50,000 Tomans in the sequel, as a gratuity to Persia from the British crown. Be this however as it may, the bond for 250,000 Tomans remained in the hands of the Prince Royal; the act of annulment was passed and ratified on the payment of the reduced amount of 200,000 Tomans; and, when Persia claimed the difference, she was told that "she could not establish a right to the greater sum, as she had subsequently agreed to accept and acknowledged that she had accepted, the less sum as the price of the sacrifice she made."\* Now, if nothing positively dishonest can be imputed to us in these proceedings, they must be admitted at any rate to involve as close a practice, as was ever followed by Clive or Hastings. That we had at the out-set improvidently contracted the subsidy engagements, and that we were at liberty to seek for a release from them at any time by a fair negotiation, may very readily be conceded; but to have obtained that release under circumstances of such extraordinary difficulty for one of the contracting parties was, we submit, to redeem our original error almost at the expense of our good name. With regard to the discrepancy also between the amount tendered in Sir John Macdonald's bond, and the sum actually paid, we suspect that Persia has still a valid claim against us for 50,000 Tomans.

The most important consideration however to Persia, resulting from the transaction which we have noticed, was the evidence it afforded of a complete change in our estimate of her alliance. Sir J. McNeill has significantly said, that "the alteration in the treaty was supposed to evince a desire on the part of England to disencumber herself of a falling ally."† Taken in connection indeed with the transfer from the crown to the Indian Government of the direction of our relations at Teheran, which occurred a short time previously, no other inference could have been drawn from it. We had awoke, it seemed, to a sense of the worthlessness of Persia. Our efforts to make her strong had but contributed to her weakness. We had been building

\* Correspondence relating to the affairs of Persia and Afghanistan, page 112.

† Progress of Russia in the East, page 135.

on a quicksand. The country existed only by the sufferance of her northern neighbour ; and it was useless therefore to undergo further expense, or to encounter further risk, on her behalf.

But here again we erred upon the side of despondency, as much as we had been formerly too bold and sanguine. Persia was never in that extreme danger of extinction—not when the Russian troops were in full march upon the capital, and when defection spread rapidly among the higher classes,—which in any way called for her abandonment, or even required an essential modification of our relations with the Shah. The prosecution of Paskevitch's march on Teheran, upon which the fate of Persia was supposed to rest, would have been a still more adventurous movement than Diebitch's advance on Adrianople : and if strategists are agreed that the latter movement was altogether false, and must have signally failed, had not Turkey succumbed under the moral pressure, much more certain must it appear—to those who know the contemptible amount of force which was employed on the occasion, and the power of resistance which is offered by the mere principle of vitality in a nation like Persia—that the Russian enterprise in Persia could have led to nothing but disaster and disgrace. We hold it, indeed, to have been morally impossible that Russia, who “ during the whole course of the war with Persia had never been able to collect more than 10,000 men in one body, nor to keep together for a month more than half that number,”<sup>\*</sup> should have occupied a territory, which contained 10,000,000 inhabitants, bound together by the common ties of religion, naturally warlike, and detesting the invaders : and, unless the invasion had been followed by military occupation, we conceive that there was no real danger for the country.

To proceed however with our sketch ; no sooner had we abandoned the idea of raising up in Persia an efficient bulwark against Russian encroachments, and had thus limited the functions of our Envoy to observation, or at most to expressions of encouragement and sympathy, than we began to take an augmented interest in the countries intermediate between Persia and India. It cannot be said that we had been indifferent to those countries at former periods. The journeys of Stirling and Arthur Conolly had been undertaken at the instigation and under the auspices, of the British Mission at Teheran ; and it was owing merely to the services of Mr. McNeill being indispensable to the conduct of affairs in Persia, that Sir J. Macdonald was deterred from detaching him on a Mission to the east-

<sup>\*</sup> Progress of Russia in the East, page 134.

ward, of an almost identical nature with that subsequently entrusted to Burnes. To the latter officer, however, must the Afghan movement, we think, be properly ascribed. Others recommended the cultivation of a position at Cabul and Candahar, as an equivoise to the pressure of Russia upon Persia—as a means of checking the disposition of the former power to keep up a sustained attitude of attack, while it promised to render the latter more docile to our counsel from our being in a measure independent of her friendship, as well as more confident in herself from our increased facilities of affording her support.

But Burnes grappled far more boldly with the question. He would at once have left the Shah to his fate, and have transferred all our solicitude to Dost Mahomed. "Had circumstances," he wrote on returning from his memorable journey, "brought us into an alliance with Cabul instead of Persia, we might have now possessed more trusty and useful allies nearer home than we can boast of in that country; and we should never have incurred a tenth of the expenditure which has been so freely lavished in Persia."

To account for Burnes's prejudice against Persia and his predilection in favor of Cabul, it must be remembered that on his first journey he saw the two countries under very peculiar circumstances. Dost Mahomed at that time was in the plenitude of his power. Uninfected as yet by western propagandism, he was as friendly to the Indian Government as his jealousy of the Sikhs, tempered by a natural circumspection, could render him. His personal character moreover stood out in bright relief among the sombre masses of his countrymen. In Persia, on the other hand, the actual state of affairs was gloomy, and the prospect was still more threatening. Groaning under misgovernment, and "broken up into a loose confederation of petty principalities," the country appeared, to those who looked on centralization as the essence of power, and cared not to penetrate a nation's spirit, to be on the point of dissolution. The Court, alarmed, even more than injured, by the relaxation of interest which our altered language and stinted expenditure betrayed, was prepared to conciliate Russia at any sacrifice. The Envoy, who had succeeded Sir John Macdonald at Tcheran, was personally obnoxious to the Shah, and had quarrelled with all the Ministers. The Prince Royal too, against the counsel of his father, who was perhaps the steadiest friend to England, as well as the best politician in his empire, had been at length prevailed on to send an army into Khorassan, in order to reduce the refractory local chieftains, and, when Burnes passed through the province, H. R. H. was concerting measures with a Russian

agent, Baron Ache, for prosecuting hostilities beyond the frontier. Those hostilities, which it was proposed in the first instance to direct against Khiva, were suspended for the moment, owing to the interference of the only British officer in camp, Captain Shee; but as that officer, with more zeal than prudence, went so far as to pass his bond for a large sum of money in order to dissuade the Prince from the enterprise, and as such a proceeding was of course disavowed by the Envoy at Teheran, the circumstance indirectly tended still further to depress our influence. In the following year 1832, the project of aggression was resumed; but the Afghans were now pointed out as more deserving of punishment than the Uzbeks; and, after some consideration, Herat was at length selected as the destined object of attack. Again, however, did our counsel interpose to prevent the intrusion of the arms of Persia into a territory almost conterminous with India; and again was the interposition successful. On this occasion, too, as Mr McNeill was the counsellor, it may be presumed that the true aim of the Russian policy was exposed, and that we lost nothing in Abbas Mirza's estimation by warning him of the snare prepared for him.

The Khorassan campaign, of which we are now treating, was the germ from whence sprung our own Afghan war, and it merits therefore more than a passing notice. That Russia had instigated the original movement, that she took a marked interest in the progress of the war, that she ever pointed to ulterior conquest, were all matters of notoriety; but the objects which she had in view in thus acting were by no means so patent to observation, nor indeed have they ever perhaps been submitted to a full and fair inquiry. The question has been usually put as follows:—Did Russia propose to push forward Persia as her own pioneer towards India? Was the whole scheme a phantasmagoria, designed for the mere purpose of frightening us out of our propriety? Was it a scheme, in short, with no substantial base—no real and tangible outline, and of which it would have been prudent, as well as safe, to have ignored the very existence? Such have been the limits generally assigned to the inquiry: but we have already hinted, and we shall endeavor to prove in the sequel, on what we consider unexceptionable evidence, that there was always a third object, more immediate in its nature, and more certain in its effect, which entered largely into the consideration of Russia. That object was to estrange England from Persia, to create an antagonism of interests between the two countries, and thus force the weaker power into a coalition with herself,—the natural results of such a coalition being that the moral power and influence of the Russian Empire in the

East would be greatly strengthened, while there would be entailed on British India either the anxiety and embarrassment of a sense of danger, or the expense of a state of preparation.

It was in the autumn of 1833, that the expedition against Herat, which the remonstrances of Mr. McNeill had caused to be suspended for a full year, was at length put in execution; and unfortunately the command of it was entrusted to the prince who, before another year had expired, was called upon to fill the throne of Persia. We say unfortunately, for to this accident may be proximately traced the events of 1838, and all the evils which followed in their train. That Abbas Mirza was actuated by feelings of hostility to England in sending an army against the capital of Western Afghanistan, no one has ever pretended to assert. That imputation has been reserved for Mahommed Shah: yet if the lust of conquest, the natural ambition of a military chief, were sufficient to account for the designs of the Prince Royal upon Herat, irrespective of the advice of Russia, at least the same allowance should be made for the temptation which must have assailed a leader, who, having been worsted on the first occasion of independent command, found himself shortly afterwards enabled to employ the resources of an empire to retrieve his failure. We have heard indeed that when the death of Abbas Mirza at Meshed in the autumn of 1833 compelled his eldest son to raise the siege of Herat, and return into the Persian territory in order to attend to the immediate duties of Government, he swore a solemn oath, after the approved fashion of the knights of old, that he would sooner or later retrace his steps to the eastward, and wipe out his disgrace in Afghan blood; and we further know that the design was ever uppermost in his mind from the moment that he ascended the throne, and that, however it may have been matured by Russian counsel, or linked with subsequent considerations of policy, the germ is thus to be sought in a deep-seated feeling of personal revenge.

We now return to the general question. Russia was at this time singularly placed. Having sown the dragon's teeth in Khorassan, she was content to await the harvest, without attempting to force on a crisis, or to disturb in any way the natural course of events. England on the other hand, (or rather British India, for the Teheran Mission still continued under the direction of the Calcutta Council,) had been partially awakened from its lethargy by the recent occurrences in Khorassan. If no measures of positive and complete relief were practicable, it was judged at any rate that the symptoms of danger might be alleviated, and that the day of dissolution for Persia might be postponed. Economists indeed suggested the idea that the expenditure in

Persia might be legitimately carried so far as would equal, but not exceed, the interest upon the gross outlay which we should be obliged to incur for the defence of India, in the event of the former country being swallowed up by Russia; and Lord William Bentinck, although at that period in the full career of his financial reform, was not indisposed to undergo some sacrifice, in order to better our condition at the Court of the Shah. A large supply of arms and accoutrements accordingly was transmitted gratuitously to Persia in 1832-33; and in the latter year a detachment of officers and sergeants, more complete even than the party which had been furnished from India when we were striving to supplant the French, inasmuch as it provided for the requirements of every branch of the military service, was placed by the Governor General at the disposal of the Envoy at Teheran for employment with the troops of the Shah.

A certain reaction did assuredly follow on this indication of a renewed solicitude. It was mainly owing to the exertion of British influence that Futtch Ali Shah was persuaded, in the summer of 1834, to appoint Mahomed Mirza, who had just returned from Khorassan, heir-presumptive to the Empire; and a commercial treaty, with the privilege of naming Consuls for the protection of our trade, upon which we set much store, and which we had been long vainly urging on the attention of the Court, might at this time assuredly have been carried, but for a personal misunderstanding between the British Envoy and the Ministers charged with the negotiation. In the autumn indeed of 1834, when Futtch Ali Shah gave up the ghost at Ispahan, Khorassan had been previously cleared of troops, except in such numbers as were necessary for the internal safety of the province; our officers had been again placed in communication with, if not in command of, the regular army; and, the heir-presumptive being apparently inclined to hold to us, our general position in Persia certainly wore a more favorable aspect than at any period since the Russian war. The accession of Mahomed Shah formed a new epoch in our relations, and deserves to be attentively considered.

Sir John McNeill, in his article in the *Quarterly Review*, has well described the evil auspices under which our intercourse with Mahomed Shah commenced. "The young Shah," he says, "had mounted the throne with the countenance of Russia, and the active support of England; but although he was unable to move his army from Tabreez until he received pecuniary aid from the British Mission, and the assistance of British officers to command the troops, and to give the soldiers confidence in the promises which had been held out to them;

‘ and although it was known and admitted at the time that the  
 ‘ success of the Shah could not have been secured, without  
 ‘ hazarding his independence, unless by the opportune and effective assistance he received from England, it unfortunately did  
 ‘ so happen that, when he had been firmly seated on the throne,  
 ‘ Russian influence was found to have gained an ascendancy in  
 ‘ his counsels, which, under the circumstances, it would have  
 ‘ appeared unreasonable, or almost absurd, to have anticipated.”

The sketch however is in so far imperfect, that there is no attempt to explain the enigma of this sudden preponderance of Russian influence, and we venture therefore to give its solution. Supposing our views to have been restricted to the continuance of a struggle with Russia for influence at the Persian Court, it was a capital error in our policy ever to have attached ourselves to the Azerbaijan party, or to have assisted Abbas Mirza's family in the question of the succession. Whilst Futtch Ali Shah lived, he would never tolerate a permanent Russian Mission at his Court. He resolutely set his face against the establishment of Consuls at the ports on the Caspian Sea, notwithstanding that the treaty of 1828 expressly conceded that point to Russia. He was in fact essentially anti-Russian, and, as far as his power and influence extended, he was ever ready to throw his whole weight into the scale against “ his cousin, the Emperor.” With Abbas Mirza, however, and his family, the case was widely different. Bred up under the shadow of the Northern Upas, they were thoroughly impregnated with its influence. They had been struck by the eye of the basilisk, and could never possibly regain their confidence. Mahomed Shah had little love for Russia; he had never forgotten the fatal field of Ganjah, where the fleetness of his groom's horse alone saved him from the grasp of the Cossacks; but he was impressed with a profound conviction of her irresistible power, and he was thus pre-disposed to yield to any pressure she might exert, however feeble in its nature or injurious in its tendency. The aid, which England afforded in seating him on the throne, was ascribed to our fear lest he should immediately sink to the condition of a mere tributary to the Russian Empire, rather than to any rational hope of our supporting him in independence. From the very day, indeed, of Mahomed Shah's accession, all chance of our competing with Russia for influence in the Persian councils was at an end; and the more that power was thrown into the hands of the Azerbaijan party, the more difficult did it become that we should ever re-gain our due position in the country.

Russia in the meantime was fully cognizant of the advantages of her situation. Satisfied that our efforts to consolidate the

power of the young monarch must, through whatever channel they were employed, or to whatever point they were directed, terminate to her own advantage, she smiled complacently on our assistance, and was quite content to occupy for a moment, but for the last time, a secondary place in the pageant. It was not even requisite to strike upon the old chord of conquest to the Eastward. So notorious was the young Shah's passion on this subject, that the coronation anthems rang with prophetic paeans of victory over the Uzbeks and Affghans; and His Majesty's speech, delivered from the throne before the foreign Missions on the first occasion of a public *darbar*, dwelt rapturously on the same theme. The constitution of the new Ministry, which, in the place of the old native and independent aristocracy, was composed of parties immediately subject to Russian discipline, either from the accident of birth, or from their previous employment and connexions, although contributing largely to our embarrassment, can hardly be cited as a separate element of trouble. This change indeed was a necessary consequence of the translation of the Tabriz court to Teheran, and the difficulties therefore that arose from it must be added to the catalogue of evils, which were entailed on us by the support of the Azerbaijan family, and for which we never seem to have contemplated any compensating good, beyond the establishment of a principle of hereditary succession.

Our "home" proceedings now require to be noticed. Mr. McNeill had been sent to England, in the autumn of 1831, to endeavour to arouse the ministry to a sense of the necessity of some more active interference, than the mere furnishing of arms and officers from India, in order to preserve the integrity of Persia; and he was so far successful, that, on the occasion of the death of Futteh Ali Shah, the crown resolved again to place our relations with Teheran under the immediate controul of the Foreign Office, and Mr. Ellis was accordingly a second time sent out from London on an embassy of condolence and congratulation to the young monarch. Much more however required to be done to fulfil the expectations that had been formed. It was necessary in the first instance that the public mind should be aroused, before government could be either disposed, or able, to undertake measures involving responsibility, or any thing like extraordinary expense; and Mr. McNeill accordingly, assisted by David Urquhart, who had just returned from Turkey, and by Baillie Fraser, who had been travelling on a special mission in Persia, set to work to *write up* the Eastern question.

Press agitation had long been a familiar weapon of attack, and on domestic ground it had been often wielded with almost as

much facility as effect; but it was a very different affair when the battle field was the far East, and when to the inpassiveness of languor was added the positive obstruction of ignorance. Perseverance and real talent however triumphed at length over all obstacles. The Monthlies poured in a close and galling fire, supported by the light artillery of leaders in the daily journals, and by charges of cavalry in the shape of pamphlets and reports. The heavy Quarterlies too brought up their masses to sustain the onset, and the mysterious "Portfolio," which was embodied for this particular campaign, proved in itself a very "Legion" of destructiveness. The public mind of England, that huge burly citadel of selfishness and unbelief, was fairly taken by assault; and when Mr. McNeill came out as minister to Persia in 1836, Urquhart at the same time going to Constantinople as Secretary of Embassy, and Baillie Fraser remaining as Oriental reporter in Downing Street, expectancy was culminating towards some great explosion in the East. We beg those of our readers, who have been accustomed to look on the Affghan war as the accident of a moment, a sudden spasm of India in an agony of mortal fear, to attend to these premonitory symptoms, which as surely heralded the movement, as the formation of "the League" preceded the repeal of the Corn Laws.

We doubt, however, if our relations with Persia had yet assumed any tangible or definite shape in the deliberations of the British ministry. Mr. McNeill at any rate, on his return to the country with further supplies of arms, and further detachments of officers and sergeants, must have still looked to the old object of making use of Persia as a defence for India, and of strengthening her for our own benefit. He was prepared probably to advocate a very much more extended and effective system of relief than had yet been resolved on by the ministry. His pamphlet on "The progress of Russia in the East," which was published just before his departure from England, pointed to the necessity of preserving the integrity of Persia at all risks; although how that object was to be attained—whether by negotiation, or money, or military assistance, or a bold defiance of Russia—was purposely left in obscurity. But these visions must have quickly faded, after he was brought in contact with the court. The Shah, he must have seen, no longer needed, nor even wished for, the protection of Great Britain. His Majesty had found a more convenient, if not a more safe, ally in Russia,—an ally who would encourage and promote his conquests, guarantee him against intestine troubles, and shield him, if necessary, against the resentment of England. It does not appear, in the Foreign Office

printed correspondence, at what time the scales first fell from our eyes, how, when the broad truth stared us in the face, that we must henceforward encounter at the Persian Court, not the insidious attack of a power equally suspected by both parties, but the open hostility of a successful rival—we proposed to meet the difficulty. There are certain circumstances which render it probable that then, at the eleventh hour, we did imperfectly shadow forth the only line of policy which, without entailing on us an enormous expense, could have availed us to retrieve our position. The distinguished reception which had been given in England to the refugee Princes of Shiraz, and the handsome pension assigned to them, seemed to point to the eventuality of a restored dynasty under British auspices in the south of Persia. The contumelious dismissal of our civil and military officers from the Royal camp in the summer of 1836, was popularly, though, we believe, improperly, assigned to the discovery of intrigues tending to the same end; and we shall presently show, that Russia herself had become alarmed at this possible, and under the circumstances justifiable, resolution of our difficulties. If, however, we ever harboured the idea of extricating ourselves by the semblance, or reality, of such a scheme, the plan must have soon yielded to the more pressing necessities of the time. Witkewitch had already started for Cabul, and the Shah was preparing to besiege Herat.

It enters not into our design to impugn or contradict any part of the evidence which Sir J. McNeill has accumulated in his article in the *Quarterly Review*, to prove the complicity of Russia in the proceedings of Persia against Afghanistan, or to show that the ulterior object of Russia in thus acting was hostility against England. We merely reserve two points; first, that the Shah was an unconscious instrument in the hands of Russia, until our opposition to his views kindled discord between us and him; and secondly, that the full scope of the Russian policy (the channel through which the feeling of hostility against us was to work, and its advantages were to be developed) has been either miscomprehended or concealed. On the first point it is perhaps unnecessary to enlarge; for, supposing that the Shah can be proved to have acted unconsciously against us, still if his proceedings were injurious, he was as amenable to our resentment as if he had been our wilful enemy. The question is only of interest in proving the complete success of Russia's machinations, which brought England almost into collision with Persia against the wishes of the one party, and without the cognizance of the other. The second point is of greater consequence; for, if the views of Russia were such as we believe them to have

been, and if those views were duly communicated at the time to the British Government, it seems the less excusable that we should have taken the bait prepared for us.

We remember to have seen a paper which reached India, long before the grand army had crossed the Indus, and which purposed to give the confidential explanations of a high Russian functionary on the policy which his Government had pursued in the affair of Herat. We know not how the paper was obtained, but its verisimilitude guaranteed its authenticity; and although for obvious reasons it has not been printed in any of the Affghian Blue Books, we venture, after the lapse of ten years, to quote certain parts of it from memory.

"Russia," it was stated, "has played a very successful, as well as a very safe, game in the late proceedings. When she prompted the Shah to undertake the siege of Herat, she was certain of carrying an important point, however the expedition terminated. If Herat fell, which there was every reason to expect, then Candahar and Cabul would certainly have made their submission. Russian influence would thus have been brought to the threshold of India; and England, however much she might desire peace, could not avoid being involved in a difficult and expensive war, in order to avert more serious dangers. If, on the other hand, England interfered to save Herat, she was compromised—not with the mere court of Mahomed Shah, but with Persia as a nation. Russia had contrived to bring all Persia to Herat, and to identify all Persia with the success or failure of the campaign: and she had thus gravelled the old system of partizanship, which would have linked Azerbaijan with herself, and the rest of the nation with her rival."

"By interfering to save Herat, and by thus checking for the moment the advance of Russian influence towards India," it was further said, "England has made an enemy of every province whose troops were engaged in the campaign—of Khorasan, Irak, Fars, Mazanderan, and Ghilan. She is now the national enemy, the friend of the Soonees, and the foe to the Sheeah faith; and Russia will not be slow to turn this revulsion of feeling to account." We remember also its being observed that, "Russia feels no anxiety at the interference of England in Affghanistan. The reports of Witkewitch have satisfied her, that, owing to the disorganized condition, the turbulent character, and the conflicting interests of the Affghan tribes, Cabul and Candahar can never form a bulwark for India. They are more likely to shatter the fabric to which they are violently attached, and cause it to crumble prematurely into ruin."

It was supposed at the time, that, in thus putting the case, Russia was affecting a satisfaction which she did not feel. She had been foiled, it was thought, and it was only natural that she should seek for palliatives to cover her dishonour, and to mitigate the keenness of her sense of disappointment. That we had sustained any real injury in Persia was doubted; and the Afghan war was considered by all, except a hesitating few, to promise the most complete success. But subsequent events, we think, verified to a remarkable extent, not only the accuracy of the Russian calculations, but the sincerity with which they were declared.

Upon the actual merits of the Afghan question, we shall not venture far into the arena of discussion; although we might perhaps communicate new facts, as well as new opinions, to the public. The time has not yet come for writing a true and detailed history of the war, either in its origin, its progress, or its close; and we must confine ourselves therefore to generalities. The justice of the expedition seems now to be pretty generally abandoned; and the expediency of it, on which ground alone the defenders of the war are obliged to rest their case, is made to depend upon the fact of an imminent danger, threatening the security of British power in the East in 1838, which could be averted, or which at any rate seemed to be evitable, by no other means. Now we will not dispute that, if Herat had fallen, there would have been a certain amount of positive danger to India. It may be questioned, if that danger would have nearly reached the crisis, which Lord Wellesley had contemplated with so much serenity in 1799: but still, as the power of Persia at Cabul and Candahar would undoubtedly have been exerted in a direction contrary to that which our own policy unfortunately took during the subsequent occupation—as she would have brought forward the Sheeah Hazarehs, the Parsees, and the Kizzilbash, to confirm and strengthen the Baruckzye ascendancy, and would thus have escaped the troubles, which arose from our pursuing the contrary course of raising into power the turbulent Dooranee aristocracy—it may not be unreasonably supposed, that she would have attained and preserved such a position in the country, as would have materially increased that to internal agitation of India, which had been already called into existence by her mere preliminary measures of attack. To this extent there was, we believe, actual danger to the British power in the East from the aggressive policy in which Persia had allowed herself, through the personal ambition of her monarch, to be inveigled; but at the same time a much stronger exhibition, than we have ever

yet seen, of the evils to be apprehended from this increased domestic agitation, would hardly persuade us that a foreign war was necessary to neutralize their effects; still less a war which violated all the acknowledged principles of military and political guidance.

An argument, however, which seems to be fatal to this defence of expediency is, that the war was *not* undertaken to avert the danger that we have spoken of. In our own opinion the unsuccessful assault of June 23rd, 1838, settled the question of Herat. The siege, we believe, would have been raised even without a demonstration on the part of England in favor of the besieged. It actually *was* raised at any rate before the army of the Indus had begun to assemble, and the fact was communicated to the Governor General while the troops were still encamped at Ferozpoor. Lord Auckland did not affect to base the expedition on the facts set forth in his proclamation of October 1st, or on the hostile advance of Persia towards India. He unequivocally stated, that "he would continue to prosecute with vigour the measures which had been announced, with a view to the substitution of a friendly for a hostile power in the Eastern provinces of Afghanistan, and to the establishment of a permanent barrier against schemes of aggression upon our North-West frontier;—" \* objects no doubt of a certain abstract value, but hardly more urgently needed in 1838 than in 1798, or than at any intermediate period.

If the Shah raised the siege through the inadequacy of his resources to support the contest, he was a contemptible enemy. The rulers of Candahar and Cabul would scarcely again supplicate, or descend even to propitiation, when their brother chief of Herat had triumphed. Their spirit of independence, and their detestation of a foreign yoke, which had yielded for the moment to the exhibition of superior force, would have revived when the phantom had passed away, and they would have been rendered all the more intractable for the future from shame at their misplaced despondency. If, on the other hand, the siege of Herat were raised, and the designs of Persia on Afghanistan were abandoned, in consequence of our sending a detachment of 500 rank and file with two six-pounders to the island of Karrack, we had at any rate a guage of the power of the nation from which we were apprehending danger. The vulnerable heel was revealed to us; and with this revelation—with the proof of our ability to controul the policy of the Court of Teheran by the application of means which could at any

\* Order of the Right Hon<sup>ble</sup> the Governor General of India. Nov. 8, 1838.

time be furnished from the garrison of Bombay—there should have come, we think, a returning sense of confidence, a consciousness that the march of a British Army to Cabul could not really be indispensable to the defence of India.

It has been further said that, independently of the advantages which the Affghan war promised to secure for us, the treaty of Lahore bound us to undertake it, and that the safety of Herat did not in any way release us from this engagement; But, in looking over the text of the treaty, we are really at a loss to understand which article can be supposed to involve such an obligation. The restoration of Shah Shujah-ul-Mulk to the throne of Cabul was no doubt tacitly assumed as the object of the treaty, and the nature and extent of the assistance to be supplied by Runjeet Singh towards the accomplishment of that object were pretty accurately defined; but whatever may have been the character of the promises and encouragement held out by us to the Shah at Lahore, there was certainly not a syllable entered in the treaty which entailed upon the British Government the liability of furnishing an auxiliary army, or a contingent, or even of affording pecuniary support to the enterprise. "The friends and enemies of each of the three high powers were," it is true, declared, "to be the friends and 'enemies of all;'" but a general defensive league of this nature is never held to pledge the contracting parties to mutual support when hostilities may arise from aggressive proceedings on the part of one of them; and to render the condition therefore applicable to the case in point, it would be necessary to show, that Shah Shujah's invasion of Affghanistan was not an aggression, or, in other words, to resume the position which we have already stated to have been generally abandoned as desperate, and to maintain that the war was not only expedient but *just*.

So entirely insufficient indeed do the ostensible grounds appear, which have been assigned for the prosecution of the Affghan war, after the danger which menaced India from the Russo-Persian movements had been dissipated by the retreat of Mahomed Shah's army from Herat, that, without attaching much importance to the rabid gossiping of Mr. Masson, we still cannot help suspecting, that it was owing in a great measure to the bureaucratic machinery of the Governor General's camp, that the troops were finally set in motion.

We will now consider the effect of our proceedings upon Persia. Herat owed its safety mainly to British interference; more however, we think, to the interest manifested by Mr. McNeill throughout the siege, which inspired the garrison with hope,

and to the fortitude and skill of Lieut. Pottinger, which contributed essentially to the military defence of the place, than to our tardy occupation of Karrack. The Shah at the same time naturally made the most of our demonstration, and professed to have raised the siege, "in sole consideration of the interests 'of his faith and country;" and the Persians generally, whose vanity as a nation is proverbial, preferred the explanation of being coerced by England to that of being defeated by the Afghans. We had therefore appeared in a new character; we had opposed the arms of Persia, and had even threatened her with invasion; and, if the nation had been identified with the court, or even with the army which had besieged Herat, such an attack on the national honour and interests might have been expected to go far to neutralize the effects of all our previous conciliatory policy.

That to a certain extent the Russian prediction of our being compromised with Persia was fulfilled, we will not deny; but we protest against the assumption, that in general estimation we changed places with Russia, or that we ever sank nearly to her level of unpopularity. There was an element, indeed, working strongly, but silently, in our favor,—the element of nationality, or a distinction of race, of which the full value has only been recently recognized in the science of political government. In the same way that we have lately seen the Scandinavian struggling with the Teuton, the Magyar fighting to the death with the Croat, the Slavonian rising against the German, so for the last ten years in Persia there has been an antagonism of race, which has been ever deepening in inveteracy, and which will hardly yet pass away without leading to some violent cataclysm. The Toork population, which inhabits the single province of Azerbaijan, was never allowed during the reign of Futteh Ali Shah to emerge from that secondary place to which its numbers alone entitled it. Abbas Mirza's army was, it is true, composed of this material; and, in the expeditions of the Prince Royal to Yezd, Kerman, and Khorassan in 1831-33, the Toork power had thus made itself pretty extensively felt throughout the kingdom; but still all offices of trust and emolument were confided to Persians; the executive power in the provinces was wielded through local means; and a native of Azerbaijan was hardly to be found in the ministry. On the accession however of Mahomed Shah the position of the two races was reversed. The Tabriz court was transferred bodily to the capital. Toork governors were sent into all the provinces, and Toork garrisons were detached to support them. The native nobility

were ground to the very dust; the native troops were disbanded, or reduced, or neglected. The municipalities were presided over by Toorks: farms, monopolies, all situations, which involved the exercise of power, or afforded means for the amassing of wealth, were entrusted to natives of the same race. The consequence was that an antipathy between the Toorks and Persians, which always probably existed, but for which under the old regime there was little or no opportunity of display, became suddenly a leading characteristic of the nation. If, therefore, the provinces of southern and central Persia shared in the mortification which was generally felt at the failure of the Herat campaign, they were at any rate consoled in some measure by the reflection, that the disgrace principally fell upon their Toork oppressors. The appearance of a British force in the Persian Gulf did not, we think, excite alarm in Shiraz and Ispahan. A fear of conquest, or occupation by a foreign invader, was certainly not the predominant feeling. That feeling was the hope that, through the instrumentality of the British arms, the power of the Toorks might be humbled, and the native race might be admitted at least to an equality of rights and consideration. We have it, indeed, from the best authority, that if the British force had landed on the coast, and had proclaimed any suitable pretender to the throne—one of the old Zend dynasty for instance, supposing that an individual of that family could have been found—the tribe chiefs throughout the southern and central provinces would have risen to aid in the enterprise; their motive being, less that of attachment to the English, or pre-disposition in favor of the cause which the English supported, than a hatred of the ruling powers, and of the myrmidons by whom they were surrounded. It did not however of course enter into the calculations of Great Britain to incur the risk of precipitating such a crisis. Our object was demonstration, not attack; and in furtherance of that object, it would have required the nicest management to conduct any military movement whatever; for too much diffidence would have hazarded the miscarriage of the enterprise, while too much confidence might have forced us on to a dismemberment of the kingdom, and have thus accelerated that collision with Russia, which for thirty years we had been striving to retard.

Fortunately although the court remained sulky and disposed to listen to any counsel which promised revenge for the affront we were conceived to have put on it, there was no occasion for our exceeding the strict limits of an attitude of observation. Ghorian, a fortress of some strength in the Herat territory, continued to be occupied by Persian troops, notwithstanding, that that

occupation had all along been declared by the British Government to be equivalent to a hostile demonstration against England. Reparation for the violence which had been offered to the messenger of the British mission, and which had constituted throughout the Herat controversy one of our gravest grounds of complaint, was still refused. Persia had ventured even to impede in some degree the working of our Affghan policy, by opening a friendly communication with Yar Mahomed Khan ("the arch-villain" as he is usually styled in India, but according to Sir J. McNeill "the most remarkable man of his age and country"), for the purpose of sharpening his already awakened jealousy at the magnificent and gratuitous aid which we lavished on Herat: yet, the progress of our arms beyond the Indus was so constant, and the results promised so favorably, that we could afford to disregard such indications of hostility, even had they been more malignantly shaped, and fraught with more immediate injury. Persia being in fact for the time innocuous, we were well enough content to await that compliance with our demands, which in the natural course of events could not fail sooner or later to take place; the interruption of diplomatic intercourse and the prolonged occupation of Karrack testifying to our offended dignity, while our extreme reserve, in desisting from all intrigue, in rejecting offers of co-operation, in avoiding every measure which might complicate our position, showed that we were not inclined to push the rupture to extremities.

Russia in the meantime was not inactive. The satisfaction, with which she had viewed our retirement, and had found Persia left to her exclusive embrace, soon gave way to a feeling of alarm, when she learnt of the gigantic preparations which British India was making to appropriate the countries intermediate between Herat and the Indus, and when she further remarked the effervescence in the public mind, and the consequent danger to the Shah, which resulted from our isolated location in the Persian Gulf. After those famous despatches of Count Nesselrode to Pozzo di Borgo, dated respectively October 20th, 1838, and February 21st, 1839, which, however ingeniously imagined and plausibly tricked out, had for their unique objects the moderation of our Affghan scheme, and the withdrawal of our force from Karrack, and which signally failed, not only in attaining those ends, but even in making out a case that should withstand an ordinary scrutiny, Russia began to organize her plans for allaying the commotion, which she had, perhaps too precipitately, called into existence, or at any rate for counteracting its effects. As she could make nothing of Persia, divided against itself, and embarked moreover in a cause which the

Emperor had already declared to be unjustifiable, she turned her attention to Khiva; and hence arose the manifest of December, 1839, which declared the great object of General Perowski's expedition to be "to strengthen in that part of Asia the lawful influence to which Russia has a right."

No one doubted at the time but that a force, vastly superior both in numbers and artillery to that which Lord Keane led from the Indus in triumph through the defiles of Afghanistan, would be able to cross the open plain of the Desht-i-kipchák, between the Caspian and the Aral: and it was in anticipation, we think, of General Perowski's success, and in deprecation of the advance of our own arms beyond the Hindoo Koosh, which was then in contemplation in order to dislodge Jabbar Khan and Dost Mahomed's family from Khooloom, that Baron Brunow significantly remarked to Sir John Hobhouse—"If we go on at this rate, Sir John, the Cossack and the Sepoy will soon meet upon the banks of the Oxus,"—and that the President replied, with more spirit perhaps than self-conviction—"Very probably, Baron; but, however much I should regret the collision, I should have no fear of the result." Man proposes, however, while a greater than man disposes. The expedition altogether failed, partly perhaps from the extraordinary severity of the season, but more essentially from the fact, that Orenburg did not furnish to Russia (any more than did Tiflis in the Persian war) that strategic base for operations beyond the frontier, which Ferozpoore, faulty, remote, and unprovided as it was, offered to India.

Dispirited by this failure, and by the supposed complete success of our Afghan occupation, (for it must be remembered, that it was the fashion of the day to paint every thing "couleur de rose," and that the few who ventured to tell the truth, were mercilessly snubbed) and foreseeing real embarrassment to herself, if we should be induced to resort to any active measures for the termination of our quarrel with the Shah, Russia now set to work to bring about that reconciliation between England and Persia, which, from the first hour of the rupture, she had professed her desire to accomplish. She believed, or affected to believe, that we were aiding and abetting in certain troubles that broke out in the south of the kingdom. A revolt of the Bakhtiarees was ascribed to the accidental presence of an English traveller, Mr. Layard, since so well known as the excavator of ancient Nineveh. The Kerman insurgents, headed by Agha Khan, it was pretended, were supplied with arms and ammunition, with money, and even with artillery, from Bombay. Baron Brunow, indeed, pleasantly complained that, "at Calcutta they still acted as if Simouich were at Teheran, and Witkewitch at Cabul;" and he further

categorically stated, that, in order to put an end to so very unsatisfactory a condition of affairs, the Emperor had called upon the Shah to comply with all the requisitions of England. If the same language had been used by the Russian representative at Teheran in 1838, which was addressed to the Shah in 1840, the British Mission would never have retired from the country. Persia, of course, as soon as she found that all European support was denied to her, Russia seconding the cause of England, and France (which had also in the interim sent a complimentary mission to Teheran) declining to interfere in the controversy, had no alternative but submission. Ghorian was evacuated, yet the party for whose immediate benefit this difficult point was at length carried, had a very short time previously confirmed his claim on our consideration by turning Major Tod out of Herat! Reparation was given for the arrest and ill-treatment of the mission courier. A commercial treaty was guaranteed to us. Sir John McNeill returned once again to Teheran; and the British troops were removed from Karrack.

This settlement was opportune. If it had been delayed six months longer, Russia would hardly have proffered the same earnest mediation; nor would the Shah's obstinacy have been so easily overcome. If we had still been in a state of quasi-hostility with Persia at the close of 1841, it would have required something more than a mere moral pressure to right ourselves at Teheran. Even with six months of preparation, Sir J. McNeill must have found it a difficult business to meet the first burst of the Cabul disaster; and the more so, as the Persians with the usual proneness of Orientals to personify all measures of policy, insisted on fixing upon our minister the individual responsibility of their failure at Herat, and he had thus to encounter the irritation and ill-will of almost all classes with whom he was brought in contact at the court. That under such circumstances,—at a season when our Indian Empire had sustained a blow, which in the estimation of those who knew not its strength, shook it almost to its foundations, and acting at Teheran with one of the ablest and most astute officers who ever represented Russia in the East,\*—Sir J. McNeill should have held Persia firm to her engagement; that he should have carried the commercial treaty; and that he should have put our relations with the Shah upon something of their ancient footing, we regard as not the least meritorious achievements of his distinguished career. In the spring of 1842, ill health compelled him to abandon Persia. He had been employed for

\* Count Medem.

nearly twenty-four years in that country, and during that interval had raised himself by his unaided talent and energy from the humble rank of an assistant surgeon in the Company's army, to that of a civil Grand Cross of the Bath—a bright example to the Indian services. So high, indeed, was the character he had earned for himself with the ministers of the crown, that, when he retired from the East, he merely exchanged his diplomatic functions for an office of equal honor, and of more utility, under the Government of his native land.\*

From 1812, until the recent death of Mahommed Shah, there were few salient points of interest in the politics of Persia. The objects of England were less, it would seem, during that interval, to struggle for influence at Teheran, or to restore strength to Persia, than to keep a watch over the proceedings of Russia; to preserve, as far as might be, the "status quo;" and to prevent at any rate our sustaining injury from sudden impulses, which prudent counsel might avert. Our expenditure was thus reduced within the narrowest possible limits. Interference in the domestic affairs of the country was studiously avoided. When the Shah appealed to us against the imperious bearing of Russia, we assured His Majesty of our sympathy, but never ventured to lead him to hope for our support. On one point only did we transgress the bounds of passive observation. A war was imminent between Persia and the Porte; and as it was evident that such a war, however it might terminate, would essentially weaken one, if not both, of the belligerents, and thus invite aggression, we determined to force our mediation on the pugnacious powers. Relying also on the Emperor's declaration, that the system which the two cabinets had a common interest in pursuing, was that of "maintaining the tranquillity of the intermediate countries, which separate the possessions of Russia from those of Great Britain," we invited Russia to send a commissioner to the conference of Erzerum, and to aid us in the work of pacification. The invitation was of course acceded to, and the conference accordingly commenced; but in the proceedings of such an anomalous congregation of parties it would have been unreasonable to expect either alacrity or even unanimity. All things indeed considered, it is, we think, more surprising that, under the joint mediation of Great Britain and Russia, any treaty whatever should have been concluded between the courts of Constantinople and Teheran, than that negotiations, for which five

\* Sir John McNeill has been for the last four years one of the "Poor Law Commissioners for Scotland;" and it was partly owing to his admirable management that the famine of 1847, which decimated Ireland, was so little felt in the sister island.

weeks would have been a very liberal allowance of time, were actually made to extend over as many years.

At the commencement of our sketch, we have remarked on the little progress that has been made by Russia, since the Affghan occupation, in that path, which the war was specially designed to obstruct, and which the withdrawal of our arms must have left more accessible than ever; and we now propose to consider this subject somewhat more in detail. It would be absurd to suppose that an erroneous view had been taken throughout of the bent of the Russian policy; and yet, if that policy were one of aggression against Persia and of hostility towards England, the question naturally arises how it happened, that the very favorable opportunity for its prosecution, which presented itself on our retirement from Affghanistan, should have been so little cultivated. The reasons, of course, of Russia's comparative inactivity can be mere matters of speculation, but we still give the following explanation with some confidence. The Affghan war, which, in the magnitude of the efforts it called forth, and the success that smiled on its commencement, took Russia somewhat by surprise, and made her almost repent of having provoked the struggle, furnished her in its sequel, not only with cause of congratulation, but with a lesson of much importance, as it might be applied to herself. If England were unable to maintain herself at Cabul and Candahar, Russia could scarcely expect to fare better at Tcheran and Ispahan. All the difficulties, that we encountered in Affghanistan, would in a much graver form beset a Russian army in its occupation of Persia. The enormous sacrifice, indeed, at which alone a nation, exclusively Mahommedan, could be overrun and held by a Christian power, was exemplified in the case of Algiers; and Russia had neither the same objects nor interests in coveting the realm of the Shah, that impelled France to fasten on her African colony. It is possible then, that the acquisitive policy of Russia in respect to Persia, and her acquiescent policy in respect to India, did actually cool, as the result of the Affghan war testified to the transcendent danger of her schemes, and as its corollaries all revealed to her the facility with which England could render abortive any plan of mere intimidation, or meet any system of attack.

The continued rebellion of the Caucasus, the ease with which Sheik Shamil baffled all her efforts to reduce him, rising up like the giant Antæus with renovated strength from every fresh encounter, must have powerfully aided in modifying the character of the Russian policy. We believe, indeed, that if her course had been otherwise uninterruptedly successful, if Persia

had surrendered herself a willing victim into the hands of her enemy, and Great Britain had given up every inch of ground beyond the Sutlej, the resolute resistance of this mountain chief would still have proved the salvation of Asia. We have heard it surmised, that Russia plays with the Caucasus to further her views in other quarters; that she favours the impression of her weakness on an unimportant point, to be enabled to employ her force with more effect where greater interests are at stake; but such is not our belief. We are convinced that for the last fifteen years at least, she has honestly and unremittingly employed her utmost available power to reduce the tribes of the Caucasus; and as Shamil at the present time, independently of his native forces, commands the services of 15,000 deserters from the Russian ranks, and can place in battery 200 pieces of ordnance, captured from the Russians in the field, or carried off from their entrenchments, we may understand, how totally inadequate that power has proved to the emergency,\* and how impossible it would have been for Russia, with her communications at the mercy of such an enemy, to push her arms still further to the eastward, or to contemplate even territorial extension. The full value of the mountain war of independence has hardly yet, we think, been appreciated in preserving the balance of power. A moderate support of Shamil might still perhaps save the Danubian principalities, and as long as his banner floats from the summits of the Caucasus, so long is Persia safe from the hostile invasion of a Russian army.

Although, however, the two checks, that we have thus noticed, imposed upon Russia the necessity of abstaining from those active measures, which might have been reasonably expected to supervene upon our Affghan reverses, it is not to be supposed, that, during the period which has since elapsed, she has exhibited no signs of animation, and no tendency to an onward movement. Her conduct, it is true, in Persia has been more guarded than formerly, and more observant, to England in particular, of the amenities which should characterise the intercourse of friendly states; but it has not been less constant in its aim, or less progressive

\* A friend has furnished us with the following story, which is currently quoted in Persia, as an example of ready repartee, but which is also not without a certain degree of political significance:—"When the Amir Nizam visited the Emperor of Russia during his Georgian progress in 1837, and introduced the Heir Apparent, then a boy of 7 years of age, His Majesty observed in the course of conversation, "Who are these Affghans, that they should be allowed to laugh at your beads in this way? Whose dogs are they to stand in the path of Mahomed Shah?" (We quote, of course, the Persian version of the story.) "Oh!" answered the Amir, "they are an insignificant set of vagabonds, not worth naming; idle unsainted scoundrels, very like those Lesghies and Daghistanis you have in the mountains." The Emperor looked as black as thunder, but said not a word further on the subject."

in its action. Her shadow has been gradually darkening over the land. Having coerced into her interests the Prime Minister, a Russian subject by birth, who, by the force of certain rules of the ecstatic school of the philosophy to which they mutually belonged, held the Shah in leading-strings, she pursued, during the closing years of the late monarch's reign, an unobtrusive but an undeviating course of interference, almost of supervision, over the internal affairs of the country. Her protection was granted to all applicants. She recommended candidates for offices, and screened offenders, constituted herself referee in disputed cases, and not unfrequently usurped and exercised the functions of the executive power. Her attention was particularly directed to Azerbaijan, and to the countries on the Caspian. She brought the Governor of the former province, the Shah's uterine brother, into direct dependence upon her, supported him against the central Government, and, when his liberty was endangered, granted him an asylum in the Russian Embassy, and ultimately, received and welcomed him as an imperial guest at Tiflis. Upon the shores of the Caspian the extreme jealousy of the littoral tribes compelled her to proceed with greater circumspection. Commencing, however, with a consulate at Resht, and agents at other ports, she obtained in process of time the authorization of the Shah to construct a naval arsenal on the island of Ashoon Ada, for the rendezvous and refitting of her marine. She then placed a consul in the town of Asterabad, to protect the trade which this establishment had created; and, shortly before the death of the Shah, she is also understood to have proposed to institute another consulate at Meshed, the extension of her commerce being the ostensible, and perhaps really the immediate, object of her activity; but political influence also, and increased facilities for intrigue follow, as she must well know, of necessity in the train of that commerce, when it may have once fairly taken root in Khorassan.

Persia herself in the meantime had presented a miserable and melancholy spectacle. She had been undergoing the very extremity of suffering which misgovernment could entail upon a nation. The Prime Minister of Persia, Hajee Mirza Aghassee, had for a period of thirteen years, his destinies of the country over which he presided more completely under his guidance, than perhaps any absolute autocrat of ancient or of modern times; and lamentably did he abuse the trust reposed in him. Self-sufficient almost to fatuity; utterly ignorant of statesmanship, of finance, or of military science, yet too vain to receive instruction, and too jealous to admit of a coadjutor, brutal in his language; insolent in his demeanour;

indolent in his habits ; he brought the exchequer to the verge of bankruptcy, and the country to the brink of revolution. Alienating at the outset of his career fully one half of the revenues of the Empire in extravagant grants to pampered courtlings, personal dependents, upstarts and empirics, he consumed the remainder in amusing the military mania of the Shah, for whose edification he prepared a park of about 1,000 pieces of artillery, and commissioned above half a million of English muskets. At the commencement of 1848, the Government paper (and it must be remembered that the finance of Persia is carried on entirely by a system of assignments) was at ninety per cent. discount. The pay of the army was generally from three to five years in arrears. The cavalry of the tribes was almost annihilated. The intense animosity of the Toorks and Persians had reached a climax, which crippled the means of action of the provincial Governors, and threatened to produce complete disorganization. With the exception indeed of Azerbaijan, in which the whole wealth of the Empire had become pretty well concentrated by the constant return of its inhabitants laden with the spoil of the provinces, Persia generally presented the appearance of a country occupied in force by a foreign enemy. Resistance to the Toorks was hopeless for the moment, but the desire for revenge was only deepened in intensity by the necessity of prolonged endurance.

In his foreign policy we do not think that the Prime Minister wilfully betrayed his country. He never submitted patiently to the tuition of Russia. On more occasions than one he proclaimed concession to have reached its limit, and struggled to break the meshes that were being woven around him. But he was impotent. He had not that confidence in England, which might have led him to throw himself upon us for protection, nor had we shown any disposition to volunteer our support, or even to grant it, if it had been solicited. A French alliance had seemed for a time to hold out a prospect of succour from a quarter where danger was to be apprehended, and had been cultivated, therefore, with more attention than in reality it merited. For a short period indeed the Comte de Sartiges held a position at Teheran more favourable, as far as the consideration of the Court was concerned, than that occupied either by the Russian or the British Minister ; but a relation of this nature was evidently artificial, and could lead to no permanent result. France had no substantive interests in Persia, for which she could have ventured to put herself in opposition either to Russia or to England ; nor, if she had been ever so much dis-

posed in favour of Persian integrity, and had desired to retain the Shah as her own minion, is it very apparent how she could have carried her plans into execution. A categorical reference on this subject was, we believe, made to Louis Philippe before the revolution of February; but that event—the expulsion of a Monarch by his subjects, and the establishment of a republican government, measures utterly repugnant to the oriental idea of the divine right of kings,—scattered, of course, the negotiation to the winds; and, until a royal or imperialist dynasty shall be again seated on the throne of France, we venture to predict that French influence will not regain at Teheran that transient lustre which flickered round it in 1847, struck out from the jarring contact of British and Russian interests.

On passing events in Persia we must be allowed to express ourselves with some reserve. Mahommed Shah died at Teheran on September 5th, 1848; and officers of the British and Russian missions immediately rode post to Tabriz to proclaim, and bring to the capital, his eldest son, Nassir-ed-din Mirza, who had been separately and conjointly recognized by the Courts of St. James's and St. Petersburg, as the legitimate successor to the throne. Persia had been so much habituated of late, in all measures of state policy, to receive her impulses from the European powers, that probably under any circumstances the simple declaration of the British and Russian Ministers would have sufficed to settle the immediate question of the succession. In the actual posture of affairs the acquiescence of the nation in that declaration was inevitable; for, of the few competitors who could pretend to exercise any influence on the general body of their countrymen, one, Bahman Mirza, was in honorable exile at Tiflis, and all the others were refugees at Bagdad. In the provinces, also, the peasantry and tribesmen were everywhere too intent upon their local emancipation, to take heed of an abstract matter like that of the succession. It may be said, then, that the Russian and British Missions, and a mere clique of notables, (who had however sufficient influence at the capital to cause public property to be respected, and generally to prevent disorder,) effected at the moment a transfer of kingly power, to which, in the best appointed times of former Persian history, the path could have only lain through long avenues of intrigue and blood. The obnoxious Minister was of course hurled from power, and only escaped the popular fury by taking sanctuary. The Toork governors generally were expelled from the provinces, and the garrisons

either saved themselves by a precipitate retreat, or, where their numbers admitted of defence, shut themselves up in citadels, and awaited attack. The young Shah encountered no opposition whatever on his march from Tabriz to Teheran. He made his public entry into the capital on October 21st: and thus ended the first scene of the drama.

The second scene is not yet played out, or at any rate we are not yet acquainted with its result in India; but as far as it has gone, it is of a much less agreeable character than its predecessor, and it adumbrates progressive trouble. In the disposition of the Shah, so far as his tender age and hitherto obscure career afford materials for enquiry, in the constitution of the court, in the state of parties, in the internal condition of the country, and in its foreign relations, we look in vain for a single element of strength, or a single characteristic of permanence. When we say that Nassir-ed-din Shah is a mere youth of eighteen years of age, it may be understood, that for a considerable time at any rate he must be a mere cypher in the Government which he is supposed to wield. The longer too that his nonage may extend, the less probably will his country suffer; for of all the characters that might pertain to an irresponsible Monarch, we should apprehend the greatest danger from one, which, to the vices of the voluptuary, added the sins of ignorance and obstinacy, and the more terrible traits of cruelty and revenge. With regard to the ministry, our only consolation is, that it cannot last, and that any change must be for the better. A fatuous priest has been succeeded by a timid scribe, and the incompetency of the one is scarcely less obstructive to business than were the eccentricities and malignancy of the other. The state of parties is still more pregnant with evil; for, over and above the two great factions, the Toorks and Persians, which have hitherto, in spirit at any rate, divided the kingdom, and which (having whetted their appetite for blood in many an encounter during the recent convulsion in the provinces) may be expected to be henceforward pledged to an internecine struggle, leading too probably to the dismemberment of the empire—there may now be considered to be a third party, which desires nothing more than to promote this struggle, and to profit by the mutual exhaustion of the combatants. We do not think it worth while to particularize petty sections, or mere personal divisions; although some of these, such as the tribe party of the Queen Mother, another oriental Messalina, may very possibly play an important part in the future government of the country: for, if a real crisis were

imminent, we conceive that all other feelings would yield to that of a distinction of race, or to the callous calculations of individual benefit.

On the internal condition of Persia, and on the present aspect of its foreign relations, we could say much, if our space permitted; but we have already exceeded the ordinary limits of a political article, and must hasten therefore rapidly to a close. In every quarter there is abundant cause for anxiety, and few, very few, faint glimmerings of hope. The rock, upon which the government of the country will first split, will be a want of funds to defray the most ordinary and limited expenditure. The treasury has been drained of its last ducat, and we see little probability of its being replenished: for neither will the provinces, after the license of an interregnum, and with the consciousness of recovered strength, be induced to submit to exactions; nor will the Prince Governors, who have been sent to replace the subordinate chiefs employed during the late reign, and who will each endeavour to establish his own independent court, be in any hurry to contribute their quota of revenue for the support of the central government. It will be dangerous, again—at any rate while the “*Res dura et regni novitas*” hamper the free action of the government—to attempt to resume the grants so extravagantly lavished by Mahomed Shah and his minister upon unworthy objects. Without pretending, indeed, to vaticination, it seems to us that the sustaining or motive power of the government no longer exists, neither can it be renewed; and that, when the original impetus is lost, the wheels of the machine accordingly must cease to work.

The general condition, too, of the provinces is hardly less unfavourable to the consolidation of the young monarch's power, than an empty treasury, and impotent and divided councils. In no quarter, we may safely say, is there any feeling of confidence in the stability of the government. The public mind is still heaving with the agitation of the many local revolutions which followed on the death of the Shah, and extensive *emeutes* have since broken out in Mazenderan, Ispahan, and Kerman; aimed almost undisguisedly against the existing government. Khorassan however undoubtedly affords the greatest cause for apprehension. Ever since the *Assaf-ed-Douleh*, the head of the old Persian party, was removed, about two years ago, from the government of the province, very great discontent has prevailed generally throughout that part of the kingdom. An accident, shortly before the death of the Shah, brought this discon-

tent to a head, and raised the population of Meshed in arms against the Toork garrison, which held the citadel. The old Russian Colonel who commanded the Toorks,\* made a brave defence, but was compelled at length to evacuate the place, and to retire with a remnant of his forces, and with the Prince Governor of the province, to the camp of Yar Mahomed Khan, who had advanced with a considerable army from Herat,—not exactly for the relief of Meshed, but with a view of sweeping the country in the general scramble, and annexing perhaps a portion of the Khorassan territory to his Affghan principality. Yar Mahomed Khan made an attempt to carry Meshed, but failed; the Khorassanis being not less inveterate against the Affghans than against the Toorks, and having now put forward the son of the Assef-ed-Douleh as their *quasi* independent ruler. It would have been easy, we believe, for the young Shah's government, at this stage of the affair, to have brought about, through British mediation, the ostensible submission of the province. The Khorassanis were resolved to be no longer trampled on by the soldiery of Azerbaijan: they had mercilessly massacred the Toorks, wherever they had fallen into their hands, and had proclaimed against them a war of extermination; but the Salar, as the Assef-ed-Douleh's son was named, had no pretension to enter the lists as a competitor with Nassir-ed-din Shah for the throne. He boasted indeed to have aided the royal cause in forcing the Affghans to retire towards Herat; and the most to which at that time he ever ventured to aspire, was that either his father or himself should govern Khorassan as a fief of the empire—that is, to be placed in fact something on the same footing, which Mahomed Ali Pasha had been allowed to occupy in his government of Egypt under the Sultan. The ministry of the Shah however seems to have shewn an invincible repugnance to the inauguration of the new reign by negotiation with a party, flushed with triumph, and still exhibiting an attitude of defiance.

It was judged indisponsable to punish the insurgents before according to any terms for a permanent settlement of the province; and reinforcements accordingly were sent to Khorassan to co-operate with the garrison which had evacuated Meshed, but which still held its ground, supported by Yar Mahomed Khan's army, upon the Herat frontier. These reinforcements, consist-

\* It must not be supposed that this officer belongs to the army of the Czar. He is a Russian refugee, who entered the Persian service some thirty years ago, and is undoubtedly the most efficient military chief at present at the disposal of the Shah.

ing exclusively of Azerbaijan troops, were beaten off from the first town which they attacked after entering the province; and they have since retired towards Teheran, where efforts are being now made to support them. That the Minister has pledged himself to reduce Khorassan "*coute qu'il coute*," would be of little consequence, if it merely involved the question of his personal fate; but unfortunately there are far graver interests concerned in the contest. According to our view it is impossible that the Toork yoke should be again violently imposed on Khorassan; and the prolongation of the struggle, therefore, in increasing the exasperation of parties, would appear to render only more certain the threatened dismemberment of the kingdom. There is indeed an alternative, which has been already freely discussed, and which might be adopted, in order to prevent this disintegration of the empire. An auxiliary Russian army might be disembarked at Asterabad, and pushed on to Meshed, either in avowed support of the royal cause, or preliminary to an arrangement of the same nature as that which made Russia the arbiter of the destinies of the Danubian principalities, and led to her present permanent (?) occupation of Bucharest and Yassy.

It would be premature at present to discuss the eventualities of such a movement. Although indeed Russia has seen with great concern the progress of our arms in the Punjab, and would assuredly desire to lessen the effect on Afghanistan of our location at Peshawur and Shikarpur, we doubt exceedingly, after the attentive examination of her career in the East embodied in the foregoing pages, that she would incur the risk at present of military operations in Khorassan. We anticipate that she will continue for some years longer the same course of gradual advance that she has pursued since the Afghan war. The effect of the succession of Nassir-ed-din Shah upon the relative positions of Russia and England at Teheran will probably be an exact reproduction of the action and reaction which followed on our united support of Mahomed Shah fourteen years ago. We shall have undergone trouble, responsibility, and perhaps expense, merely to render the Russian predominance more certain. A short blaze of popularity may possibly attend the first indication of our awakened solicitude for Persia; but that we shall fall back into a secondary position, as soon as the season of exertion may be over, and that of fruition may arrive, we hold to be a necessary consequence of the nature of things. As far indeed as Russia finds that she can press with safety upon the incapa-

bility of a boy king, and the incoherency of a divided government, so far it may be presumed, that she will be prepared to push on her approaches. That she will replace her minion Bahman Mirza in the Government of Azerbaijan may be considered inevitable ; that she will strengthen herself at Asterabad, and push her feelers into Khorassan, is equally to be expected : that she will further controul the court, and through that controul will make herself felt wherever the authority of the court extends, is hardly to be doubted ;\* but to adopt any more active course of interference, before the outburst of that domestic crisis, which may be imminent, and cannot be very distant, would be to stultify her previous caution, and to plunge herself into needless embarrassments. By what measures on the part of England, the armed intervention of Russia in the north or in the east of Persia, if ever it should take place, would require to be met, would depend, not less upon the European combinations, to which in the meanwhile the election of Louis Napoleon to the Presidency of the French Republic, or other causes, might have led, than upon the state at the time of the finances of India, and upon the degree of fixity and security which might have been obtained for our North Western frontier.

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\* As we write, we hear of the arrival at Teheran of a splendid Russian Embassy conducted by Lieut.-Gen. Schilling, and charged ostensibly with the empty form of congratulating the new monarch on his accession. We shall be surprised if this embassy does not replace Bahman Mirzah in Tabriz, obtain further grants in Asterabad, and perhaps establish a consulate at Meshed.

- ART. II.—1. *General Orders by the Governor General of India in Council.* 1801-1849.
2. *General Orders by the Commander-in-Chief in India.* 1801—1849.
3. *The Calcutta Englishman and Military Chronicle.* 1848—1849.

WE are not afraid of being charged with attaching undue importance to a subject of no 'public concernment,' or with misapplying the pages of the *Calcutta Review*, if we devote some small space to a consideration of the condition, during the first months of their servitude, of those gallant young fellow countrymen of ours, whose arrival at Calcutta we see daily chronicled in the papers, to supply the vacancies in the commissioned ranks of the Bengal Army, which climate and battle are for ever causing. We believe that no fact can be better ascertained, than that the future character of these young men takes its complexion, in nine cases out of ten, from the manner in which the first few months of Indian residence are spent: that the habits formed during this period are rarely parted with in after-life; and that according as the Ensign is steady or profligate, prudent or extravagant, attached to his duty or indifferent to it,—so, in a great majority of instances, is the Lieutenant, the Captain, and even the Field Officer. Therefore it is, that we are desirous to draw attention to what we conceive to be the short-comings of the system devised at our own Presidency for the guardianship and instruction of these young men, (or rather of such of them as come out in the Infantry) during the time that necessarily intervenes before they can be permanently posted to regiments: and, at the same time we are anxious to shew how very much the evil is generally increased by the ignorance of parents, as to the way in which the pecuniary assistance, which almost all afford their sons on first starting in India, can be best and most advantageously applied. The subject is not perhaps a very attractive one to the general reader, nor shall we strive to make it more so by any attempt at fine writing. We desire to tell a plain, straightforward tale, to afford information to the future young military officer, and to those who place him in the service, and to attract the attention of those who have the power to remedy existing abuses.

On first landing from the steamer or ship which has brought him from England, the Cadet finds himself claimed by one of the myrmidons of the Fort Adjutant of Fort William, who

unites with that appointment the secondary one of 'Superintendent of Gentlemen Cadets.' He is forthwith installed in quarters in the range called the 'South Barracks,' in Fort William, is provided with the necessary servants, enrolled a member of the Cadet's Mess, and then proceeds to enjoy himself, pending his departure to join a regiment, after the fashion of young men just released from the confinement of a long sea-voyage, and perhaps for the first time their own masters. During his stay in Fort William there is nothing to interrupt the unrestrained flow of his enjoyment: his time is entirely at his own disposal: and, as it is, and has been, the fashion of parents, from time immemorial, to furnish their sons with letters of credit upon some mercantile house in Calcutta, under an undefined idea that certain heavy expenses in the way of uniform, &c. will have to be incurred on arrival in India, the means of enjoyment are not wanting. It may therefore be imagined, that the month or so spent by the cadets,—we beg their pardon, the unposted ensigns—in Fort William, pending the departure of the steamer which is to take them to the Upper Provinces, is not generally spent in the most profitable manner imaginable: on the contrary, that debt often incurred, and habits of extravagance and dissipation contracted, which militate sadly against their future comfort and respectability. It is true that the young gentlemen are nominally under the control and supervision of the Superintendent of Cadets; and we do the officer who at present holds this appointment, no more than justice, when we say that he has every inclination to do his duty. But, to say nothing of other difficulties, which will suggest themselves, this gentleman's duties as Fort Adjutant, occupy too large a portion of his time to allow of his giving much attention to the concerns of the young officers under his charge. The most, we believe, that he can contrive to do for them, is to settle any little disputes between them and their servants, to draw their pay, arrange their passage, and give his advice when asked. Thus then it would seem that the system from the very outset is faulty. For the first month of his Indian residence the young officer is left entirely to himself; is subject to no sort of control; and, what is perhaps worst of all, has his pockets full of money—money, which the ignorance of his parents has given him the means of spending when there is no possibility of his benefitting by it, but the want of which he will feel most grievously hereafter, when he joins the regiment to which he is finally posted. The subsequent arrangements for the disposal of these young officers are not, it will be seen, less faulty than the first.

The unprofessional reader must understand, that owing to the great distance between England and India, and, until lately, the tedious nature of the communication between the two countries, it has always been considered necessary by the Court of Directors to have a number of young officers, supernumerary to the establishment, waiting in this country, so as to be ready to fill vacancies the moment they occur. In earlier times, when the European officers were few, and the army was almost constantly on actual service, the importance of this may be understood. The system, however, has remained unaltered to the present day; and hence it has always been a difficulty with the Indian Government, how to dispose of these supernumerary heroes, pending their being brought on the effective strength of the army. In the early part of the present century, (in 1802 we believe) a Military College was founded at Baraset for their reception. Before the experiment, however, had been fairly tried, the institution died of inanition, from the exigencies of the Mahratta war requiring the presence of every available officer in the field. After a suspension of nearly three years the College was resuscitated, in 1805; and during the next five years some of the subsequently most distinguished officers, which the Bengal Army has produced, passed through its classes. In 1811, it was however finally abolished, the advantages derived from it being found incommensurate with the evils it caused. The following extract from a despatch of the Court of Directors, of the date of 1808, affords a clue to the cause of its extinction.

“ And whereas it has been represented to the Court of Directors by the Government abroad, that many of the Cadets at the Institution have manifested a serious disposition to insubordination towards their superiors, and have been guilty of gross irregularities and ungentleman-like conduct towards each other, the Cadet is hereby informed, that, on his arrival in India, he is subject to Martial Law.”

After the abolition of the Baraset Institution it became necessary to devise some other way of disposing of the cadets, until they could be finally posted to regiments; and the system, which, under certain modifications, has continued to the present day, was therefore adopted. The cadets on landing were permitted to choose with what regiment they would do duty:\* and when a sufficient number had been collected, they

\* We are under the impression that at one time, between 1811 and 1820, all cadets were required to do duty with the European Regiment, (now 1st European Bengal Fusiliers.) If such was the case, it must have been when the regiment was at Dinapore, and, perhaps, Ghazipore, between 1810 and 1822. The General Orders issued to the Army do not, however, so far as we can ascertain, contain any order to this effect, or any allusion to the existence of such a regulation.

were sent off, in fleets, to their several destinations, by the river route, each fleet being placed under the charge of an officer of standing, either specially detailed for the duty, or proceeding to rejoin his regiment from furlough, or elsewhere. There are few of us, probably, who have not heard something of the scenes which used to be common in these fleets, during their progress up the river; how the inhabitants of the villages on the banks used to flee at their approach, and how drinking, and debauchery of every kind, varied by an occasional duel, or the homicide of some unfortunate native, used to be the order of each and every day. This state of things continued until the Government steamers began to ply between Calcutta and Allahabad, when most of the cadets naturally adopted the more rapid and agreeable mode of travelling which they afforded, and the fleet system died a natural death; the few unposted, who still preferred the antiquated budgerow, proceeding singly, or in parties of two or three only, to their destination.

The change thus accidentally introduced,—for up to this time the authorities do not appear to have interested themselves in the matter—was unquestionably greatly for the better; but still the arrangements were very imperfect. Great irregularities were found to occur amongst the parties who still preferred to join their regiments by budgerow, and who were now of course devoid of all control. A sample of what we allude to is to be found by reference to the General Orders for one of the earlier months of 1845: moreover, up to this time no station in Bengal or the North-west Provinces had been barred as a resort for unposted ensigns; and, accordingly, they were to be found in all quarters,—at Berhampore and at Bareilly, at Mhow and at Mullye. In one respect at least this license of choice was good, inasmuch as it prevented the likelihood of any very large number of unposted ensigns being congregated at the same station. It had however this disadvantage, that ensigns, who had selected any of the more remote cantonments, at which to pass their poviciate, could contrive to loiter a most unconscionable time in joining; and, as they rarely took the trouble to report themselves at the military stations on their route, they were often lost sight of, by the army authorities, for months together. Lord Hardinge, whose attention during the time he remained at the presidency, and before the affairs of the Punjab engrossed so much of his time and thoughts, seems to have been very largely devoted to the concerns of the army, appears at length to have noticed this; and, in June 1845, he issued the following General Order:—

“The Right Hon’ble the Governor-General of India in Council, having had under consideration the inconveniences resulting from the present mode of allowing young officers to proceed in boats by themselves to join their regiments, and deeming it desirable that some better arrangement should be devised, with the view of ensuring their earlier arrival at their respective destinations, is pleased to direct, that, immediately after the publication at the Presidency, of General Orders by the Commander-in-Chief, posting young officers to corps, or on permission being granted to any of them to do duty with particular regiments, pending such posting, the Superintendent of Cadets in Fort William will adopt measures for securing for officers, whose regiments may be at or above Allahabad, or at inland stations off the river, the requisite accommodation on board one of the first Government steamers leaving Calcutta for the Upper Provinces. The Superintendent of Cadets will report the departure of young officers to the Fort Adjutant at Allahabad, or at intermediate stations on the river to Station staff officers; who, in communication with Post Masters, will make arrangements for forwarding them without delay, by dawk, to their respective corps.

“In all such cases no boat-allowance will be drawn; but the charges connected with the conveyance of young officers by river steamers, and by dawk, will be defrayed by Government, contingent bills being forwarded through the proper channels for audit and adjustment.”

Admitting the necessity for keeping a large number of supernumerary officers in this country, in readiness to step at once into each vacancy as it occurs, and that there is no other way of disposing of these supernumeraries intermediately but by sending them to do duty with different regiments, it appears to us that the rules laid down in the foregoing Order are the very best that could be devised. It is provided, that the cadet’s stay in Calcutta shall be as short as possible:—that the speediest mode of travelling which the country affords, shall be adopted in conveying him to his destination: it is rendered impossible for him to loiter on the road; the entire charge for the journey is defrayed by Government; and the choice of any station in Bengal or the Upper Provinces, is allowed him. But before this Order had been in force a twelve-month, the last and most important provision of it was lopped off; and henceforth it was declared, that no Infantry cadet would be permitted to do duty at a station higher up the country than Benares. The result has virtually been to limit the cadet’s choice of station to Dinapore and Benares: for Barrackpore had been prohibited

some time before this; and also, if we are not mistaken, Berhampore; and these are the only other stations between Calcutta and Benares. Hence it is, that such large numbers of unposted officers have been congregated of late at Dinapore and Benares, and that the evils to which it is our object to draw attention have arisen.

The obvious intention, of course, in sending the unposted ensigns to do duty with regiments, is, that they may acquire a perfect acquaintance with their duties as subaltern officers, before the time comes for them to be finally posted. Now we all know that at present (the more's the pity) no very great amount of training is required to fit a lad for performing the duties of a subaltern, either in the Queen's or Company's service. To be able to go through, in his own person, the drill laid down in the book of Regulations for the recruit: to be able to put a company through the evolutions laid down in the Company Drill; and lastly, to have a sufficient acquaintance with the mysteries of guard-mounting to enable him to march the regimental guards to their posts: we believe we are correct in saying, that such an amount of proficiency is all that is absolutely required from a subaltern officer, before the Adjutant reports him 'fit for duty.' But even this scanty amount of professional knowledge is unattainable, under present arrangements, by the young officers doing duty at Benares and Dinapore. This is perfectly easy of demonstration. There are only three parties in a native infantry regiment upon whom the duty of drilling officers can properly devolve,—the Adjutant, Serjeant Major, and Quarter Master Serjeant. True, every regiment has a staff of native drill instructors, and truly efficient they are in many corps; but many Adjutants, we are told, object, and perhaps properly, to employ these men for the purpose of drilling officers:—first, because a young man, fresh from England, and with exaggerated notions of his own importance, pays but an unwilling obedience and attention to a man he calls a "nigger;" and secondly, because to place an European officer, under any circumstances, under the tuition of a native havildar, or a private soldier, is considered calculated to impair the respect which it is so desirable the native soldier should feel for every thing in the shape of an European officer. Now an Adjutant's duties on the drill-ground are of course merely those of general superintendence, and assuredly do not leave him the requisite leisure to act the drill serjeant to a squad of young officers. The same may be said with respect to the Serjeant Major, so that the Quarter Master Serjeant only is in

fact available for this duty ; and as of the ten or twelve young men generally doing duty with each regiment at Benares or Dinapore, not two, in all probability, are equally advanced in their drill, it stands to reason that they cannot all be drilled by the same man at the same time. The result is just what might be expected. The young officer gets a slight smattering of his drill, partly from the Serjeant Major, partly from the Quarter Master Serjeant, and partly from the drill havildar ; and then the Adjutant is forced to report him fit for duty, in order to make room for another batch. It may be said that this matters little, because young officers can always be re-drilled when they join their own regiments ; but the reader will please to remember that our argument throughout is founded upon the premises, that first habits are every thing ; and that in India, above all countries, the effects of first habits are rarely shaken off : and thus we maintain that the youth, who only half learns his drill in the first instance, rarely acquires it thoroughly afterwards, but remains deficient in the A. B. C. of his profession to the end of the chapter. The round shoulders of our European Foot Artillerymen have often been brought up in judgment against the Bengalis, by the martinets of the other Presidencies : might not the round shoulders and ungainly gait of many of our Infantry officers, be similarly, and quite as justly objected to ?

The above, however, is a trifling disadvantage of the present system, and is completely thrown into the shade by the more serious evil we are about to mention. It seems to be a condition of cadet-humanity,—and for the matter of that, of a good many other classes of humanity also,—that no sooner are a dozen or two of them got together in the same station, than every species of riot and extravagance forthwith commences. It was so at the Baraset Institution, at Barrackpore, and at Berhampore, when those stations were respectively the great resorts of the unposted ; and, as we have previously said, in the fleets during their progress up the river. Benares and Dinapore have formed no exception to the rule, and, amongst the unposted ensigns doing duty at these stations, the greatest dissipation has, if we may believe what has been stated without contradiction in the public prints, prevailed during the last two or three years. Gambling, in particular, and a reckless habit of incurring debt, would appear, both from public and private accounts before us, to have reached an alarming extent. Instances, we are told, are on record, and have even been of frequent occurrence, in which ensigns have lost enormous sums, (enormous if we consider the pay of

the players), chiefly to one another, at cards and billiards, and have joined their regiments, after doing duty for four or five months, owing as many thousand rupees. Indeed, it is a common cause of complaint at present amongst regimental officers, that the young men who join regiments from Dinapore and Benares, are, for the most part, so deeply involved in debt, and have their pay so extensively cut, either by the Court of Requests, or on account of payments to the Mofussil Banks, or in consequence of promissory notes which they have given to tradesmen and others, that it is absolutely impossible for them to join the regimental institutions—Band, Mess, &c.,—or, joining them, to avoid falling into arrears. We feel that it would not be fair to mention individual instances of what we allude to, and, indeed, it would scarcely strengthen our case to do so, inasmuch as the fact which we have stated is notorious. It could hardly be otherwise when the state of things at Benares, some months ago, reached the ears of the late Commander-in-Chief at Simla, and led to the issue of sundry instructions in regard to these riotous young gentlemen, which, so far as they go, are good, and have served to check the grosser irregularities complained of. For instance, we have before us a list of questions, entering into very minute particulars regarding character and conduct, which officers, commanding regiments with which unposted ensigns have been doing duty, are required to answer when the latter are finally posted, and a copy of which questions and answers goes to the ensign's future regiment. The value of such a check upon misconduct can be well appreciated.

That gambling and other vices should be common amongst the young officers at Benares and Dinapore, is not to be wondered at, when their situation is fairly considered. In the first place, —to say nothing of their being young and inexperienced, and having no sort of duty to perform for at least twenty-two hours out of the twenty-four,—we are obliged to confess, what perhaps is not very creditable to the army, that where a dozen or so of unposted ensigns are attached to a regiment, they are not regarded with any great complacency by the officers of it, or considered to have exactly the claims of brother officers upon them. Hence they do not meet with that friendly, straight-forward admission into the bosom of the regimental society, which the young officer permanently posted to a regiment experiences, and the effect of which generally is to keep him from going very wrong, or at least from perpetrating any egregious folly or extravagance. The feeling with which they are regarded is of course quickly perceived by the unpost-

ed ensigns; and they are encouraged by it to form an independent society among themselves, and to keep aloof from all other, which we take to be a main cause of the disorderly ways they fall into.

Again, it should be remembered, that, whilst unposted, and merely doing duty with a corps, the ensign wants that grand inducement to steadiness and propriety of conduct to be found in the consideration that he is amongst those who are to be his companions for life, and on whose good will, and favourable opinion, he is dependent in a great measure, not only for his future happiness, but also for success in life. On the contrary, having the prospect before him of making another beginning hereafter, he is naturally less anxious as to how he is regarded by those amongst whom he is temporarily thrown. Few like to get the character amongst those with whom their whole lives are to be spent, of being gamblers, drunkards, or spendthrifts; whilst many are indifferent as to how they are regarded by those with whom they are sure not to spend six months, and from whom they may be separated in the course of as many days.

It may be said, that admitting the difficulties of their social position, still the young officers doing duty at Benares and Dinapore, being attached to regiments, are placed by Government under military control, and that their immediate commanding officers, and the commanding officers of those stations, are responsible for the correctness of their behaviour, both in a military and moral point of view:—in short, that the system is not to be blamed, because those whose place it is to carry it out fail in their duty. We admit that at first sight it would seem so, and that, theoretically speaking, the commanding officer is no less responsible for the private, than for the public, character of his subordinates; but practically it is otherwise, at least in Indian military life. The scattered way in which the officers of regiments in India live, (each perhaps, half a mile from the other, and still further from the Commandant), so different from the concise arrangement of barrack quarters; the climate, which for the best part of each year keeps one and all confined to their own quarter, the greater part of each day: and, more potent still, the custom from time immemorial of the service, must always prevent the officer at the head of a regiment from exercising much interference in, or influence over, the private life and pursuits of those under his command. And if this be so in the case of officers permanently attached to regiments, how much more where half a dozen or a dozen young lads are merely temporarily sent to do duty with a corps, with the certainty of not remaining

above five or six months, and the chance of being ordered a thousand miles off in five or six days.

Having thus placed before the reader the working of the present system, by which some thirty or forty young men are congregated at two of the smaller stations of the army, without any adequate provision being made for their superintendence and control, we proceed to consider wherein the remedy for this lies, and what better arrangement it is in the power of the Indian, or of the Home, Government to introduce.

At first we felt disposed to advocate the revival, in some shape or other, of the Baraset Institution, but in a different locality;—being moved thereto by the conviction, that it is only at such an institution, that a young man, who has not had a military education before coming to India, has a chance of picking up that practical knowledge of his profession, which almost every Indian infantry officer wants at some time or other of his career. Thus, how frequently has it occurred in India, that infantry officers have experienced the advantage of knowing something of an artilleryist's duty,\* or the disadvantage of being totally ignorant of it! The same holds good of field, to say nothing of permanent engineering. What, for instance, would have become of the "Illustrious Garrison," or rather would Lord Ellenborough ever have had the opportunity of christening it by that name, if Major Broadfoot, an infantry officer, had never turned his thoughts to an engineer's duty? But on more mature consideration we have thought that the experiment of a second military college, after the experience of Baraset, would be too hazardous, as well as open to too many objections of other kinds, to make it prudent to recommend it. A disorderly ill-managed college would be productive of more harm than is chargeable even upon the present defective system; and, though really able and energetic supervision and management would doubtless effect a great deal, still, if there was the slightest relaxation of these, (as who can say there might not be?) it is not difficult to foretell the result. On the whole, therefore, we think the best thing to be done is, *to do away with the entire race, both of cadets and unposted ensigns*, and to let every young man, who, under present arrangements, obtains a cadetship, be presented instead with a commission as ensign in the Honorable Company's ——— regiment of European or Native infantry.

\* Take an instance, the first that occurs to us. When Major Ferris was attacked at Pesh Bolak, shortly after the Affghan rebellion broke out, he reports that he was enabled to do the enemy a vast deal of damage, thanks to the skilful way in which his Adjutant—Lieutenant Lukin—a Madras infantry officer, laid their only gun, a six-pounder. Major F. had not, we believe, a single artillery-man with him.

We have already adverted to the origin of the practice of sending out supernumerary officers to India, to be ready to step into vacancies. It might have been, as we said, a necessary practice when the European officers were few, and casualties frequent; but with the present comparatively liberal establishment of officers attached to each regiment, and the altered position held by us in Hindustan, the necessity of it has ceased. True, Lord Gough ordered up all unposted officers to join the Army of the Sutlej in 1845-46; but it is difficult to conceive, with what object, or to what possible use he could have intended to put them. For all useful purposes every unposted ensign might just as well be in England as in India. Suppose them posted however:—without intending the juniors any disrespect, it is quite immaterial, we beg to observe, how long the fifth ensigncy of a regiment remains vacant; and at any rate it is far better for the service, that it should remain vacant for a twelve-month, than that it should be filled up, at the instant of its occurrence, by a dissipated *blasé* youth, confirmed in vicious habits and propensities by six months' independent idleness at Benares or Dinapore.

The plan we propose would work as follows: at stated periods (say every three months, or oftener if thought desirable) the Commander-in-Chief would send home to the Court of Directors a list of the regiments in which there might happen to be vacancies. On receipt of this list, the Court would proceed to appoint ensigns to fill these vacancies, and direct them to proceed at once and join. Thus the change would be trifling, and yet a great object would be gained. The change would be that the Court of Directors would have the posting (as well as appointing) of ensigns, instead of the Commanders-in-Chief at the different Presidencies; the object gained would be that the dangerous noviciate, which every young officer now goes through, would be abolished. A reformation more complete, and yet upsetting fewer existing arrangements, it is difficult to conceive.

Were the alteration we contend for to be conceded, the provisions of Lord Hardinge's Order (which we quoted in a former page of this article, and which, we believe, are still in force as regards posted ensigns,) are admirably adapted to effect all that would remain to be done for young officers after their arrival in India. We would however suggest, that, in cases where no steamer might be available to take them towards their destination within a week of their landing from England, it would be better to send them off by dawk instead; for we

must repeat, that a prolonged stay in Calcutta on first arrival in India is a great evil, and that the effects of it generally make themselves felt for many a long day, in the shape of an empty purse, and numerous entries on the wrong side of the shop-keepers' ledgers.

We sincerely hope, that some one of the Directors, who reads the pages of the *Calcutta Review*, may be struck with the simplicity, no less than the desirableness, of the change we advocate. But in the meanwhile, we would join hope, enough has been said to bespeak the attention of the authorities in India—Lord Dalhousie, and Sir Charles Napier—to the case of the unposted ensigns; and that, pending any better and more final arrangement regarding them, the privilege, which they enjoyed until lately, may be restored to them, of choosing, through the entire length and breadth of the land, the station at which they will do duty. So far indeed from limiting them to two stations, and thus giving them the choice of only five regiments, as at present, we would absolutely prohibit more than *two* from doing duty at the same time with the same regiment. With this remark we close this portion of our subject.

It now remains for us to fulfil our promise of showing how greatly the evils, attendant upon a young man's early military career in India, are enhanced by the injudicious way in which it is usual for parents to apply the pecuniary assistance essential to ensure the young officer a fair start in India.

Allusion has already been made to the practice of supplying cadets with letters of credit upon mercantile houses in Calcutta, under the mistaken idea, it would seem, that they are subject to heavy expenses immediately on landing. The fact is, that nothing can be more injudicious, or less calculated to serve any useful end, than this practice. The time when money is really required is, when the cadet or unposted ensign is finally posted, and has joined his regiment; and this is the very time that, at present, he has it not. From the moment the cadet lands in Calcutta, his ensign's pay commences, and it is fully adequate to the expenses of his living in Fort William. He is carried, be it remembered, from Fort William to the regiment with which he is to do duty, at the public expence,—that is, the hire of his cabin on the steamer is paid for him, and all for which he is chargeable, is his table expenses on board. We are aware that the charge for the latter is exorbitant: it amounts to three rupees a day for living, exclusive of liquors, which are charged for at the rate of one rupee for a bottle of beer, and so in proportion. Still, as an ensign's daily pay in India is between six and seven rupees, and as on board the

steamer he has no extra expenses, except perhaps for one servant ; it is clear, that whilst in progress from Calcutta to his station, he can live like a gentleman upon his pay. On arriving at Dinapore or Benares, as the case may be, it becomes necessary for him to expend a small sum in furnishing his quarters, and the purchase of a pony ; and this sum, it must be admitted, his pay is unequal to furnish. His pay is however adequate to all ordinary and reasonable expenses whilst doing duty with a regiment ; and, as the cost of his journey from Dinapore or Benares to his final destination is again defrayed by Government, the letter of credit ought to have remained all but intact, until he actually joins his own regiment.

We maintain then, that supposing a young officer to come out from England with a complete 'kit' (as all do), the only expense necessarily incurred, up to the time of joining his regiment, which his pay is inadequate to meet, is that of furnishing a subaltern's quarters at Benares or Dinapore, and purchasing a pony ; and if we allow 150 rupees for these two purposes, we are liberal. But how stands the case at present ? Why, thus : that the young officer having access, in nine cases out of ten, to the full amount of his letter of credit the moment he lands, makes such good use of his time, that the greater part of it is squandered away before he leaves Calcutta, and the whole expended before he has been a month at Benares : and this often without his being chargeable with any gross acts of extravagance or folly, but simply because he does not know the value of money in general, and of his letter of credit in particular, and applies the proceeds of the latter to meet every casual expense, for which other funds are not available at the moment.

We believe that the following may be taken as affording a tolerably fair specimen of the entrance fees to regimental institutions, and of the other charges, which an Ensign is called upon to pay on joining most of our Bengal regiments :—

Mess donation,.....	Rs.	250
Band ditto, .....	„	100
Book-club, .....	„	25
Purchase of a tent, .....	„	250
Trifling alterations of uniform, such as new buttons, facings, &c., &c., ..	„	100

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Total, Rs.... 725

Now we must premise that the pay of an ensign in the Honorable Company's service is, in round numbers, two hundred rupees a month, *and is, when received clear, and free of any deductions, just enough, with great prudence and self-denial, to support the recipient of it as a gentleman.* From the moment however that any portion of it is stopped, it becomes inadequate: of this there can be no doubt. Let the situation then of a young officer be conjectured, who, having squandered away his letter of credit, and perhaps run deeply into debt besides, finds himself called upon, on joining his regiment, to defray out of his bare pay a sum of between seven and eight hundred rupees. And yet this is the state to which the ignorance of parents, in a great measure, reduces at least nine out of ten of our young military heroes at the present day. A few of them eventually perhaps obtain additional assistance from home, which enables them in the end to pay up, and commence again with their pay clear: but the majority have nothing for it, but to apply forthwith to our convenient Mofussil Banks, from whose bonds they do not escape for years, or perhaps not at all during life-time.

We need not stop to point out the moral of the foregoing remarks, which must be sufficiently obvious, but shall proceed to say a few words on one point more—the last to which we desire to direct attention—because it appears to us to be generally misunderstood.

It is a common notion at home, that once shipped off to India, in the Honorable Company's military service, a lad is provided for life, and can never have any future claim upon the paternal purse-strings. This notion, it is true, receives an occasional rather rude shock, as, for instance, when Ensign A. writes to his father, that he is five thousand rupees in debt, and, if not immediately relieved, expects to be dismissed the service, for not taking up his promissory notes. Still, as a general rule, the notion prevails to this day; and many fathers feel fearfully outraged, if they happen to receive from India a modest intimation, that Major B. is about to give the regiment a step, and that the gift—or say the loan—of the amount of the writer's quota will be highly acceptable. Now, after what we have written, we do not fear to be accused of being the apologists of cadet or subaltern extravagance; and therefore we have no hesitation in affirming, that such requests are highly reasonable, and should be granted, whenever circumstances will admit. We entreat the patience of our Indian (and of course initiated) readers, whilst, for the benefit of the uninitiated at home, we devote a few lines to an expla-

nation of this purchasing of steps, which would be otherwise unintelligible to many. Let it be known then, that the Indian military service is one of pure seniority, just like the Royal Artillery, or Royal Marines. Each officer enters his regiment as junior ensign, and rises to the majority, step by step, as casualties occur amongst those above him. The faster therefore those above him can be prevailed upon to die, invalid, or retire, the more rapid will be his promotion. Hence, for many years, a practice has prevailed in the service of offering the seniors of a regiment heavy sums to induce them to relinquish their profession. Thus the Major of an infantry regiment, who is willing to retire on obtaining his promotion to that grade, can generally command thirty thousand rupees from his juniors; which sum is levied proportionably, according to certain scales in use, due reference being had to the exact advantage each is calculated to derive. The senior Captain's share of the thirty thousand rupees, thus levied, is generally set down at twelve thousand,—that of the senior Lieutenant at three thousand five hundred,—of the senior Ensign at twelve hundred,—of the second Ensign at four hundred,—and of the third and fourth Ensigns at two hundred and fifty, and one hundred and fifty, rupees respectively. If then, as we have stated (and our statement may be fully relied upon), an ensign's pay, when received unencumbered, is only just sufficient to keep him free of debt, it is plain that he cannot, without borrowing, raise even the least of these sums, and that, whatever sum he borrows, he must go into debt elsewhere to pay. Under this view of the case, we strongly recommend to all who have sons in the Indian service, and whose means will allow them to do so, to take upon themselves the payment of all "steps," at least as long as their lads remain ensigns; and if the same assistance is continued whilst they remain in the other subaltern grade, we will engage, that the money so spent shall be money well laid out. A Lieutenant, it is true, may contrive, on his increased allowances, to pay off, without incurring debt elsewhere, any sum he is compelled to borrow to defray his quota of "steps"; but he cannot do so, and hope to save also for furlough. Let no parent then, we would say, whose means are ample, shelter himself from reasonable applications of this kind, under the plea that the Indian service is a complete provision for all emergencies; on the contrary, let him take our word for it, that Indian subalternhood at least is but a prolonged and dreary struggle against poverty and debt, where occasional assistance of the kind in question is not forthcoming.

- ART. III.—1. *First and Second Reports on the Grand Ganges Canal.* By Major P. T. Cautley, Bengal Artillery.
2. *Report of Committee on the Grand Ganges Canal.*
3. *Instructions to the Executive Officers of the Ganges Canal.* By Major Baker, Bengal Engineers.
4. *Report of Canal Medical Committee.* By Major Baker, Engineers, and Dr. Dempster, B. M. S.
5. *Report on the Eastern Jumna, or Doab Canal.* By Major Cautley, Bengal Artillery.
6. *Report on the Western Jumna, or Delhi Canals.* By Major Baker, Bengal Engineers.
7. *Notes of Watercourses in the Deyrah Dhoon.* By Major Cautley.
8. *Report on the Nujufghur Jheel.* By Captain Durand, Bengal Engineers.
9. *Printed Papers on Canals of Irrigation in Italy.*
10. *Report on Projected Canals in the Delhi Territory.* By Major Baker, Engineers.
11. *Reports on the Ravee Canal, &c. MSS.* By Major Napier, Engineers.
12. *Memorandum on the application of the waters of the Punjab to Agricultural Purposes. MSS.* By Lieut. R. Baird Smith, Engineers.

IN a former number (No. IX. for 1846), we presented to our readers a sketch of Canal Irrigation in Rohilkund. We now propose to enlarge our field of view, and, by the aid of the mass of valuable canal literature specified above, to detail what the British Government has done, and what it proposes to do, for the extension of irrigation throughout the North-Western provinces.

To dwell on the importance of an abundant supply of water to the progress of tropical agriculture is unnecessary. Without it produce is inferior alike in quality and quantity; and, of such vital necessity is it among a people whose social framework is essentially agricultural, that public opinion has attached no higher fame to states or individuals, than that, by devoting their resources to the construction of tanks, or bunds, or canals, they have extended cultivation, and relieved it from dependence on variable and uncertain seasons.

The first Indian canal dates from a reign distinguished

by many improvements in legislative and fiscal policy: and although the primary object of its construction seems to have been the increase of imperial luxury, rather than the advancement of the prosperity of the country, yet Feroze Toghlak\* was too enlightened and benevolent to have been indifferent to the wants of the people over whom he reigned. The monarch, of whom it is recorded, that he built "fifty dams across rivers to promote irrigation; forty mosques; thirty colleges; one hundred caravanserais; thirty reservoirs for irrigation: one hundred hospitals; one hundred public baths; one hundred and fifty bridges: besides many other edifices for pleasure or ornament," is not likely to have constructed with great labour the canal that bears his name, solely to supply the fountains, or water the gardens, or fill the wells, around his favourite hunting palace of Hissar. His good intentions however appear to have been early frustrated, since, in not much more than half a century after his death, the water in his canal ceased to flow beyond the lands of Khythul, and the neighbourhood of Hissar returned to its original sterility.

The position of the head and the source of supply of Feroze's canal are matters of some doubt. The united testimony of the historians of the period, and uniform tradition, would lead us to believe that the supply was drawn from the Jumna, at its debouchment from the range of the Sewalik Hills. But a most interesting and hitherto unknown document, obtained by Lieutenant S. A. Abbott from Abdul Saiwad and Abdul Mustakim, Pirzadas of Dhatrat, a town on the western boundary of the district of Khythul, and published with a commentary by Lieutenant Yule of the Engineers, tends to prove that Feroze drew his canal from the Chetang Nala, one of the drainage lines from the Sub-Himalayas, west of the Jumna. The document in question

\* In his most interesting preface to the *Index of Mahomedan Historians* we observe that Mr. H. M. Elliott is disposed to attach but little credit to the works of the Mahomedan Emperors, believing them in all cases to have originated in motives of personal luxury, rather than of general benefit. We do not however see any just reasons assigned for depriving sovereigns like Feroze Shah, or Shah Jehan, or Akbar, of the merit commonly assigned to those whose reigns have been signalised by such works as the canals east of the Jumna. It is very certain that if the restoration and extension of these works had not promised an increase of revenue to the British Government, they would never have been undertaken. To suppose that a disinterested regard for the welfare of the country alone was the actuating motive for these, or any other, works we have executed, would indicate but a limited knowledge of their history. Mr. Elliott claims high credit for the British Government on account of its works for irrigation; and we cordially grant it: but at the same time we see no reason for exalting it at the expense of those of its predecessors, who have distinguished themselves by their works of general utility. The time has not yet arrived when Government will act on any higher principle than that of a selfishness more or less enlightened, and we believe that due credit may fairly be assigned both to the few good Mahomedan rulers India has had, and to the British Government, without invidious contrasts, or nice analysis of actuating motives.

which is a Sunnud of the Great Akbar, dated in the month of Shawal A. H. 978 (A. D. 1568) states that "The Chetang Nuddi, by which Feroze Shah Badshah, two hundred and ten years ago, brought water from the nalás and drains in the vicinity of Sudhaura, at the foot of the Hills, to Hansi and Hissar, and by which, for four or five months of the year, water was then available, has, in the course of time, and from numerous obstacles, become so choked, that, for the last hundred years, the waters have not flowed past the boundary of Khythul,—and thence to Hissar the bed has become so choked that it is scarcely discernible:" in consequence of which state of affairs, the Emperor declares that his Firmán had gone forth during the previous year (A. H. 977, or A. D. 1567) that the waters of the nalás and streams at the foot of the hills at Khirzabad (a town near to the present Delhi canal head), which are collected in the Sombo river, and flow into the Jumna, be brought by a canal, deep and wide, by the help of bunds, &c. into the Chetang Nuddi, which is distant from that place about 100 kos, and that the canal be excavated deeper and wider than formerly, so that all the water may be available at the abovementioned cities (Hansi and Hissar) by the year 978." It is a singular and somewhat unaccountable circumstance connected with Akbar's canal labours, that no mention of them is made by any of the historians of his reign; and that there is no tradition even, connecting his name with any of these ancient excavations, all of which are attributed to Feroze Toghlak: yet the Sunnud is said to present no good ground for suspicion, and its genuineness appears to receive confirmation from incidental circumstances. It would therefore appear that, while Feroze constructed in 1351 the first Indian canal, drawing an intermittent supply from the Chetang, it was to Akbar that the country west of the Jumna was indebted for a perennial stream drawn from that river.

It is impossible to read the "Canal Act," from which this information has been obtained, without regretting that it tells us but little more. At a time when problems, connected with the most important points of canal management, are pressing for solution upon ourselves, it would have been most interesting, it might have been most valuable, to have learned from an authoritative source, how such questions were decided by a mind like Akbar's, so comprehensive in its general views, so judicious in its minor details. The indications given, however, of his canal system are faint and feeble, and may be condensed into few words. A superintendant of canals was nominated under the title of "Mir-ab," the chief of the waters, with absolute autho-

city throughout his jurisdiction. In his hand were vested the charge of the works, the distribution of the water, in short, all executive, revenue, and police details connected with the canal. The works would appear to have been constructed by forced labour, since all local officers are enjoined to furnish labourers, &c., without delay. To those however who complied with this requisition, water is promised during the season of cultivation and for the entire year. How this water was distributed is but faintly indicated. The Mir-ab is to determine the number of cuts necessary for each Pergunnah, and, in a spirit of equal justice, he is directed to be careful that all parties, rich or poor, weak or strong, share alike. From other sources of information it is supposed that the amount of water rent was rated according to the time the heads of the cuts, probably of fixed dimensions, remained open. While the necessities of the zemindars were thus ministered to, the comfort of travellers was not forgotten; and it is directed, "that on both sides of the canal down to Hissar, trees, of every description, both for shade and blossom, be planted, so as to make it like the canal under the tree in Paradise; and that the sweet flavour of the rare fruits may reach the mouth of every one, and that from these luxuries a voice may go forth to travellers calling them to rest in the cities, where their every want will be supplied."

With these brief and imperfect notices, our sketch of the Western Jumna canals to the time of Akbar terminates; and we pass over the succeeding 60 or 70 years, during which history is silent, to the reign of Shah Jehan, when we find new works undertaken and completed with characteristic magnificence. The foundation of Shahjehanabad, and the natural desire to secure for his new capital and favourite residence the benefit of an abundant supply of water, induced the Emperor to project the Delhi canal. In Ali Murdan Khan, so distinguished for his architectural taste and skill, he found an agent admirably qualified to give effect to his wishes; and, although the first attempt proved a failure, the error was ably rectified by the ultimate selection of the best course which could have been adopted. Ali Murdan Khan's first line parted from Feroze's canal at a place called Madlonda, and, pursuing a southerly course to Korana, it there entered an extensive natural hollow, the head of a great drainage line, and following that, in a highly embanked channel, as far as Gohana, it turned thence to the south east by Intoula, and, nearly on the existing line, entered Delhi. On the first opening of the new canal it was found that the embankments

near Gohana were inadequate. The water, entering the great hollow there, found no efficient line of escape: it gradually rose over, and ultimately burst, the banks, and, committing fearful devastation, destroyed the town of Lalpur, the extensive ruins of which are still to be seen in a hollow near Rohtuk. The inefficiency of the line having been thus fatally demonstrated, an entirely new channel was excavated from Rehr to Intoula, traversing the anticlinal ridge, or natural water-shed of the country, until it reached the vicinity of Bowana. Between this point and the city of Delhi, very low land intervenes; and, to carry the canal successfully across this hollow, much caution and skill were required. To give command over the supply, an escape or outlet was constructed at the upper extremity of the line of embankment, by opening which the surface level of the canal could be greatly reduced. Over the lowest part of the hollow the canal was carried by a masonry aqueduct, beneath which the drainage water of the country found escape. Clearing the low land, the canal wound for some distance along the base of the Aravulli Hills, and, at a favourable point, boldly crossed this ridge by a channel cut through the solid rock, no less than sixty feet deep at the crest. It then flowed through the city in a masonry bed, throwing off to the right and left innumerable minor streams, by which the residences of the nobles, and the various divisions of the city, were abundantly supplied. Throughout the great halls, and courts, and private apartments of the imperial palace, the plentiful stream was carried in numerous channels both above ground and below, supplying the graceful fountains, filling the marble baths, watering the rich fruits and flowers of the adjoining gardens, and adorning throughout its entire extent that truly regal abode in a manner worthy of the magnificent taste of its great architect.

The success of Ali Murdan Khan's labours was complete. The immense number of old water-courses along the whole line of the Delhi canal shew to how great an extent the agriculture of the country benefitted by its existence. Traditions of incredible amounts of revenue having been realized from villages on its banks still linger among the people there; and a proverbialism, current at Delhi, intimates that the clear returns from the canal were sufficient for the maintenance of 12,000 horsemen. The permanent establishment, maintained for purposes of police and repair, consisted of numerous bildárs (diggers), 1,000 armed peons, and 500 horse, stationed under their officers at points three or four miles apart.

For about a century and a quarter after its original construction in 1626, the Delhi canal continued efficient; aged zemindars informed a British officer, on survey duty in the neighbourhood in 1807, that they were finally deprived of canal water about the year 1753, in the reign of Alimgir II. The canal of Feroze had ceased to flow in Hurriana about 1707, and at Suffidún about 1740; so that the Mogul canals became practically extinct nearly in the middle of the 18th century. The causes of this were simple. The general disorganisation of society, consequent on the decadence of the empire, rendered all measures of conservancy impossible; the irrigated country was the constant battle-field of contending parties; the works fell gradually into decay, and, amidst the struggles for existence that marked the reigns of the feeble successors of Aurungzeb, internal improvement was forgotten, and the system of irrigation, which, with greater or less efficiency, had existed for about four hundred years, became finally extinct.

Crossing now to the left bank of the Jumna, we have to sketch rapidly the ancient history of the Eastern Jumna, or Doab, canal. In common with the Delhi branch, the construction of this canal is ordinarily attributed to Ali Murdan Khan. Its head was established immediately under the Sub-Himalayan, or Sivalik Hills, possession having been taken of an old bed of the river, bearing at this day the name of the "Búdha Jumna." Passing by the hunting palace of Shah Jehan, called Badshah-mahal, it entered the bed of the Raipur nala, and, carried thence in an excavated channel across the Intunwala and Nowgong mountain torrents, it was thrown into a low ravine, near the town of Behut, which it followed until it reached the bed of the Muskurra river, near the village of Kulsia. Entering there upon the high land, the canal was carried past Saharunpur, Rampur, Jellalabad, Shamli, and other large towns, until it descended again into the valley of the Jumna, and, passing another imperial palace at Ranup, fell into the river nearly opposite the city of Delhi.

Although there is every reason to believe that the canal was excavated on the line described, it is very doubtful whether a supply of water was maintained in it for more than one season, if indeed for so long. There are remains of old embankments and aqueducts in the vicinity of Badshah-mahal; and the palace itself was abundantly supplied with interior and exterior channels, with marble fountains of great beauty, and with suites of rooms adapted for cold and hot baths. But if there is any faith to be placed in local traditions, the Emperor's visit to this de-

lightful retreat was exceedingly brief, and was curtailed for reasons amusing enough to be worth noting.

The visit of an Emperor and his suite was no more agreeable in those days to the inhabitants of the adjoining country, than the presence of like high functionaries is now. An effort to relieve themselves from the infliction was therefore determined on. To have used force would have been folly, so stratagem was resorted to. Along the base of the lower hills, the goitre of the Alps is by no means an unusual disease. A large number of women afflicted with it were collected, and, when supplies were required for the Emperor's zenanah, these women carried them in. The ladies naturally enquired concerning the cause of the shocking deformities presented to them, and the village women, as previously tutored, told them they would soon discover it for themselves, as no one could breathe the air, or drink the water, of these parts, without immediately having swellings of the same kind. There was instant commotion in the zenanah: the Emperor was summoned, and entreated by the alarmed ladies to permit them at once to leave such a dreadful place. So earnest were they, that (the tradition says) the Emperor at once sent them away, remaining himself for about a fortnight, hunting tigers in the great forests around. This was his first and last visit to Badshah-mahal.

The great difficulties at the head of the canal were doubtless beyond the skill of the Mogul engineers: and, as there are no signs of irrigation in the southern part, and no masonry works of any kind, it may be concluded that, after the first opening, which is said to have been followed by great injuries to the towns of Behut and Saharunpur, the attempt to maintain the supply was abandoned.

About 1780, Zabita Khan, Rohilla, is said to have re-opened the channel, and to have brought a stream of water, through the bed of the Kirsunni River, to the site of the great city projected by him in the neighbourhood of Jellalabad, Thanah Bhowan, and Lohari, in the district of Muzuffer-nuggur. But his canal could have been open only for a few months; and with the first rain-floods, it was doubtless seen that the difficulties were too formidable to be overcome.

We are now prepared to pass onwards to the consideration of the canal works of the British government, but we pause a moment to notice one most interesting result, to which investigation of the historical records of the ancient canals has led. When describing the excavations of Feroze, Ferishta mentions incidentally that the work-people, employed upon them, found

near the lower hills quantities of "giants' bones." For nearly two centuries and a half this seemingly fabulous statement passed unnoticed. To minds familiar with discoveries in fossil geology the old chronicle had however a faint gleam of significance; and, guided by its feeble light, English officers of the canal department re-examined the localities indicated, and found, associated with others of different dimensions, not "giants' bones," but bones most gigantic, from which, in course of time, they were able to add to the system of nature many new and strange animals before unheard of. Pursuing their labours at remote stations in Upper India,\* drawing their materials for comparison from the forests and rivers around them, denied many of the facilities for research which happier local positions would have afforded, they yet won for themselves European fame, and rewards ranked among the highest which the courts of science in their own land had it in their power to bestow.

Soon after these provinces came under the British government, the propriety of restoring the Mogul canals began to be agitated. Attention was first drawn to the subject, it is said, by the offer of a gentleman (Mr. Mercer) to re-open the Delhi canal at his own expense, on being secured the whole proceeds from it for twenty years. This offer was declined, and, about the year 1810, several officers were deputed to survey and report upon the lines both East and West of the Jumna. The reports however, when submitted for the consideration of the Chief Engineers and Surveyors General of the time, elicited such a variety of opinion from these officers, that the government was paralysed, and the question dropped into temporary abeyance. It was resumed, however, with characteristic vigour during the administration of the Marquis of Hastings, who, in 1817, appointed Lieut. Blane of the Engineers to superintend the restoration of the Delhi canal, and in 1822, Lieut. Debude, of the same corps, to survey and report upon the Doab canal. The works were carried forward with energy from these periods; and we have now to detail their nature and their results.

Commencing then with the Western Jumna canals, as the earliest in date and largest in dimensions of now existing canals, we find that Lieut. Blane judiciously established the head of supply at the highest possible point on the right bank of the

\* Saharanpur and Dadpur, the head quarters respectively of the Eastern and Western Jumna canals.

Jumna. Taking possession of a deserted bed of that river, he carried the canal through it, and across a perfect net-work of minor channels, whose heads were closed by earthen bunds, until it reached the Patrala river, one of the Sub-Himalayan drainage lines. Following the Patrala for a short distance, it left this river by an excavated channel; and, crossing the bed of the Sombe, another first class mountain drainage line, it pursued its course through a new channel to the town of Búrea, where it fell into a natural hollow; and, skirting the high land westward of the Jumna, it followed the old line to Kurnaul, and thence to Delhi.

The original views of Government and of its officers were very restricted. Doubts were entertained of the ultimate success of the restored canal. Expensive works were discouraged; and the only object contemplated in Lieut. Blane's time was to maintain a small supply in the Delhi branch. All the works undertaken were accordingly of a temporary and most imperfect character; earthen bunds were used for carrying the canal across the beds of the intersecting mountain streams: few, if any, bridges were considered necessary, the canal being fordable throughout; and natural channels were invariably taken possession of, in spite of their defective levels, and tortuous courses.

Labouring however with great zeal, and struggling with many difficulties, Lieut. Blane had the satisfaction of seeing the canal re-enter Delhi after a suspension of more than half a century. He lived however only to complete his project, and, dying in 1821, was succeeded by Captain, (now Major General) Tickell, who maintained and improved the works executed by his predecessor.

The development of the Western Jumna canals, on the scale to which they have now attained, is however due to Colonel John Colvin, C. B. late of the Bengal Engineers, an officer of eminent professional talent, of great energy of character, and of unwearied zeal, whose memory is still affectionately cherished among the people, for whom he laboured so long and so ably. Appointed in May 1820 to superintend the restoration of Feroze Shah's canal, (an extension of Lieut. Blane's project, which had been favourably received by Government) he subsequently in 1823 succeeded to the superintendency of the works of irrigation generally, throughout the Delhi territory.

A period of great activity now commenced. The evils due to the imperfections of the original design for the restored canals had already declared themselves: the increased supply required

for Feroze's canal being brought by the same main channel, as that for the Delhi branch, to their point of separation at Rair, it had become necessary to construct numerous bridges, and to raise massive embankments north of this point. The increased demand for water on both branches having at the same time led to their supplies being enlarged, the cross communication could no longer be maintained by fords; and these had to be replaced by bridges, built without interruption to the supply of water for irrigation, which could not be interfered with, without great injury to the people and to Government.

The grand difficulties however were experienced in the northern division of the canal, where the drainage waters of the upper and lower Himalayas, collected in the beds of the Jumna, the Patrala, and the Sombe, had to be controlled and regulated. The inefficient system of carrying the canal across the beds of the drainage lines by means of earthen bunds, liable to be swept away by every flood, was a constant source of heavy expense and irretrievable delay. Yet so powerful in those days was the spirit of false economy, so decided the preference of temporary expedients to permanent remedies, on the part of the Government and the controlling authorities, that ten years were allowed to elapse, before sanction was granted to the project for substituting an efficient masonry dam, in place of the sand and gravel bunds previously in use.

The history of this dam (situated at Dadupur, the head quarters of the Western Jumna canals) given by Major Baker in his excellent report, is a most interesting sketch of the varied difficulties and dangers entailed upon it by its peculiar position in the midst of a knot of powerful torrents; and, although to describe them at length would occupy more space than we can afford, we commend his narrative to the notice of all who take pleasure in learning how means, simple in themselves, have been employed by skilful men to produce great results, in controlling fierce floods, in protecting most important and expensive works, and in maintaining uninterrupted the supply of the canal, on which the prosperity of the country and the revenue of the state are equally dependent.

Although the ultimate issue of the struggle between the canal officers and the three great rivers encompassing the Dadupur works has been to vindicate the usual supremacy of mind over matter, and to place these unruly enemies under control,—it must be remembered that they are ever ready to rebel

and to renew their attacks; but the mischief they can effect is foreseen, and, if the executive officers are duly supported, the result will not long be doubtful. They, however, must not be harrassed by ignorant interference, by restricted means, by useless distractions of their thoughts and time to meet petty objections, or to conform to a mistaken economy; but they should be controlled wisely, and supported cordially, in the execution of duties in themselves often wearisome and harrassing enough both to body and to mind.

In nothing has the spirit of false economy more perniciously affected the prosperity of existing canals, than by preventing the executive officers from submitting any comprehensive plans for remedying the evils of the original designs of the works. It was felt to be useless to submit plans which, entailing considerable expense, would inevitably on that ground alone have been rejected. The accidental circumstances of Lord William Bentinck's presence in the North Western Provinces, and of his having taken a personal interest in canal works, led to the sanction of the Dadupur dam in 1830.

Not so fortunate was the project, submitted by Colonel Colvin five years later, for excluding the floods of the Sombe and Patrala from the bed of the canal, by means of a regulating dam, built across the latter, and connected with the west flank revetement of the Dadupur dam. The Military Board of the day rejected this most essential work because of its cost: and, ten years afterwards, in consequence of the enormous evils, due to the free entrance of masses of silt-charged water into the canal, having forced themselves into notice anew, a work of the same class, but of far greater cost, and executed under difficulties of the most serious character, which in the first instance scarcely existed at all, was of necessity authorized, and is only now advancing very slowly towards completion. When this regulating dam is finished, the control of the drainage will be as perfect as circumstances will permit: but it is somewhat melancholy to reflect, that it has taken a quarter of a century to accomplish what might have been effected in less than half the time, had Colonel Colvin's plans been duly appreciated.

The defects of alignment and level in the southern parts of the Western Jumna canals have exhibited themselves in a manner sufficiently well known. The increase of silt deposits in some parts, and of supply of water in all, requiring the formation of high embankments, has led to the interception of the natural drainage of the country, and to the consequent forma-

tion of many unseemly and malarious swamps. Most vigorous efforts have, however, of late years, been made to remedy these evils, and none can be more anxious for their removal than the canal officers themselves. If we find, from occasional references in Major Baker's Report, that the remedial measures adopted have not at all times been either so judicious, or so successful, as might have been desired, we still see that the march of improvement has been but little impeded by such partial failures, and that, if the same general system of intelligent activity prevails, many, (if we cannot say all,) of the admitted evils now existing will be removed before many years pass by.

For perhaps the worst part of the whole canal, a remedial project is adverted to in the 87th paragraph of Major Baker's Report. It is to abandon entirely the existing main line, from Dadupur to about six miles south of Kurnaul, and to carry the canal in a new channel, with a correctly regulated slope, through the "Bangar," or high land, bordering the Jumna, instead of as now through the "Khadir," or valley of that river. The rectification of alignment and profile thus effected would of necessity entail considerable expense, as involving the formation of about fifty miles of new bed, and the construction of a number of bridges, aqueducts, and falls. On the score of this expense Major Baker condemns the project, unless it could be satisfactorily proved that a great saving of water would be effected by its successful completion. As we demur to this conclusion, we shall briefly discuss the question.

It is admitted that although the defects of the canal between Dadupur and Kurnaul may be palliated by the consolidation and improvement of the embankments, they can never be wholly removed. They are due almost entirely to the existence of the canal, which has super-saturated the naturally spongy and pervious soil, has intercepted the natural drainage of the country, and has led to the formation on both sides of noisome and pestilent swamps. These store-houses of evil have been entailed on the adjoining country by the hand of Government; and, unless the Government interferes to rectify the mistake, they must remain a perpetual heritage of sickness and suffering to the neighbouring people. We regard it, therefore, as a primary duty of the state to spare no cost to shorten the existence of such a condition of affairs; to look beyond its own interests, to which Major Baker's view of the case is restricted, and to have regard to the interests of the people also; and to reflect that although the expenditure required may produce no

direct return to the Government, it would relieve the community at once and for ever from numerous admitted, and otherwise irremediable, evils. The question is one less of finance than of humanity and justice. An accumulated surplus revenue of sixteen lacks of rupees, or £160,000, has accrued from the canals west of the Jumna; and the annual income is at least twice the expenditure. Government is therefore supplied with abundant resources, wherewith to effect improvements, and can afford to apply a portion of these, without rigidly exacting a proportionate pecuniary return. The ambition of all interested in these canals should aim at making them, so far as professional skill and liberal outlay can, sources of unmixed good to the people, as well as of profit to the State; locally unexceptionable, as well as generally beneficial. We therefore conclude, that, although we could not hold out the prospect of the smallest return from the money invested in carrying out the measure referred to, the broad and simple fact, that it would remove effectually the many and serious evils of the existing line, seems to us sufficient justification for the outlay. That such a view would be taken of the question by the local Government and revenue authorities of the North Western Provinces, we believe to be nearly certain: and even for those whose views do not rise higher, or range farther, than to small economies, arguments are not wanting. That the passage of the canal through a firm soil, and in a carefully regulated bed, would lead to a very large saving of water by decrease of absorption, actual leakage, and evaporation, is unquestionable, and, although it may be difficult, perhaps impossible, to estimate the amount so as to make it matter of calculation, we entertain no doubt of its being found sufficient to ensure a fair and moderate return on the funds expended. This return would be farther increased by the restoration of portions of land now lost to the cultivator from excess of water, and by such extension of irrigation on the new line as the saving of water would justify. Motives for minds of various capacities being thus provided, we trust, that the project is not destined to be strangled at its birth,—a species of infanticide, too often, it must be confessed, practised on schemes of improvement by those who ought to be their natural protectors.

We annex a tabular abstract of works of various kinds on the Western Jumna canals, which will give the reader an idea of their nature and extent; and with this they must be satisfied, as details would occupy more space than we can afford.

## 1.—Abstract of works on the Western Jumna canals.

	Masonry Jams.	Stop Valves.	Escapes.	Lock Gates.	Overfalls.	Weirs.	Aqueducts.	Bridges.			Chokies.		Depots.	Grain Godowns, &c.			Mills.	Workshops.	Tajbushas*.	Irrigation Outlets.		Drains and Inlets.	Masonry Channels.	Revetments to Canal.	Arched Channel.	Bridges, for millstreams, Escapes, and Wheels.		
								Suspension.	Masonry.	Timber.	1st Class.	2d Class.		Mills.	Workshops.	Tajbushas*.				Single.	Cistern.					Timber.	Masonry.	Aqueducts.
Main Canal from Head to River .....	1	2	...	...	...	...	1	4	6	10	11	1	1	1	1	2	2	...	...	...	...	...	...	...	2	9	...	
Delhi Branch .....	...	2	...	1	...	2	...	34	33	7	12	...	5	9	...	10	147	144	...	at Delhi	1	3	1	1	6	3		
Bulla ditto .....	...	...	...	...	...	...	...	10	...	...	2	...	...	...	...	...	4	10	...	...	6	...	...	...	...	...		
Hansi ditto .....	...	3	2	...	1	...	...	41	2	7	11	...	1	1	2	4	...	...	...	...	...	...	...	...	5	...		
Bahadera ditto .....	...	5	...	...	...	...	...	14	...	3	3	...	...	...	...	...	...	116	12	...	...	...	...	...	...	...		
Durba ditto .....	...	1	...	...	...	...	...	11	...	1	1	...	...	...	...	...	...	76	...	80	...	...	...	...	...	...		
Rohruk ditto .....	...	3	...	7	...	...	...	21	12	4	4	...	...	...	...	2	33	56	...	...	...	...	...	...	...	...		
Butana ditto .....	...	...	...	...	...	...	...	24	1	2	5	...	...	...	...	...	...	49	25	...	...	...	...	...	...	...		
Total...	112	4	2	8	1	2	1	159	54	34	49	1	7	11	4	18	425	24	36	1	3	1	3	20	3			

\* *Rajbahu.* A large cut for irrigation.

The main source of revenue from the canals, west of the Jumna, is of course the water rent. This rent is levied in two ways; 1st, on the area of the opening of the irrigation outlet at a certain rate, usually two rupees per annum per square inch, for what is locally called "Shor," that is natural irrigation, and half that sum for "Dahl" or artificial irrigation.

2d. On the area of land irrigated, the rates are discriminating, both as regards the nature of the crop grown, and the kind of irrigation, whether natural or artificial, employed. On measured land, they are as follow:—

	Natural irrigation per acre.	Artificial irrigation per acre.	
1. Fruit Gardens .....	Rs. 5 0 0	4 0 0	per annum.
2. Vegetable Gardens, Indigo, Sugar Cane, Tobacco, cultivated Grasses, and Herbs.....	2 0 0	1 8 0	per crop.
3. Rice, Cotton, Wheat, Oats, Indian Corn, Guhnee, Vegetables, (single crops) Safflower.....	1 0 0	0 10 8	ditto ditto.
4. Gram, Barley, Oil Seeds, Chunnahs, Jowar, Pulso of all kinds .....	0 10	0 8 0	ditto ditto.

There are also variable rates for the different forms of irrigating machines used by the native agriculturists, so regulated as to give irrigation at the general cost of 8 annas per acre.

Any discussion of the principles of the canal assessment system may be advantageously postponed, until we have described other existing canals; and we therefore in the meanwhile restrict ourselves to the facts of the case. The following statement shews the gradual development of the revenue from water rent up to the present time:—

2.—*Statement of annual amount of water rent on canals west of the Jumna.*

Previous to 1820..	876 4 0	1834-35...	1,14,005 8 3
1820-21..	14,646 2 1	1835-36...	1,10,602 11 3
1821-22..	24,618 8 11	1836-37...	1,53,176 15 1
1822-23..	21,458 5 0	1837-38...	2,72,377 13 5
1823-24..	36,015 6 1	1838-39...	1,89,644 15 3
1824-25..	26,646 0 7	1839-40...	2,24,382 15 3
1825-26..	48,374 6 9	1840-41...	2,25,817 15 3
1826-27..	33,975 0 0	1841-42...	2,63,068 13 0
1827-28..	34,160 14 7	1842-43...	2,70,300 10 11
1828-29..	52,952 10 7	1843-44...	2,60,555 8 9
1829-30..	53,375 0 0	1844-45...	2,31,022 8 9
1830-31..	57,700 0 5	1845-46...	2,60,693 13 2
1831-32..	51,016 4 11	1846-47...	2,62,529 13 8
1832-33..	65,804 11 3		
1833-34..	1,48,783 2 6	Grand Total...	Rs. 35,17,613 8 8

Reference to this statement will show that the growth of the revenue from water rent was very slow. It was not indeed until the year 1883-34 that the income covered the expenses. The exceedingly unsettled state of the agricultural population, the constant fluctuations of the summary settlements of the government land revenue, and the novelty in many localities of canal irrigation, were the chief causes of this slow progress. The permanent settlement of the land revenue gave a great impetus to the extension of canal irrigation: and 1837-38, the year of the great famine, fatal as it was to districts not protected by canals, exhibits a remarkable increase,—a fact pregnant with meaning. To illustrate the benefit, on this sad occasion, of the canals to the community, we subjoin a calculation of the gross value of agricultural produce saved by irrigation in the districts of the Delhi territory.

3.—*Statement of the gross value of crops grown on land irrigated from the Western Jumna canals in 1837-38, the greater part of which land would have been totally unproductive without the use of canal water :—*

KHURIF, OR RAIN CROPS.

12,806.25 acres of Sugar Cane and Indigo, at Rs. 80 per acre.....	10,25,500	0	0
47,026.25 acres of Cotton at Rs. 48 per acre .....	22,57,260	0	0
46,256.25 acres of Rice, Jowar, &c., at Rs. 38-4 per acre .....	17,76,240	0	0

RUBI, OR COLD SEASON CROPS.

199,375 acres of wheat, barley, gram, mustard, &c., at Rs. 48 per acre .....	95,70,000	0	0
Total.....Rs.	1,46,28,000	0	0

This return is compiled from one given by Major Baker, and is founded on actual measurement. The rates are very moderate, less indeed than might have been assumed with perfect impartiality; and the result shows that nearly £1,500,000 sterling, in agricultural produce, was saved by the canal; of which about one-tenth, or £150,000, was paid to Government as land and water rent, while the remainder supported in comfort, during a period of devastating famine, the inhabitants of nearly 500 villages.

Any more striking illustration of the social and fiscal value of canals could not be given; and its force is enhanced, so far as the state is concerned, by the fact that the entire cost of the works (not including ordinary repairs and establishment) on the canals west of the Jumna, up to the present time, amounts to only £119,474; so that the returns of the year 1837-38 in land

and water rent have covered the whole expenditure, leaving a surplus of nearly £26,800 from this source alone.

The next important item of canal revenue is the rent from flour mills. These mills consist of substantial buildings of masonry, located near the large towns of Kurnaul, Delhi, and Hissar. The machinery is of the most primitive kind, being a small vertical wheel, with oblique horizontal spokes, slightly hollowed, on which the water impinges. Although these machines do not economise more than 30 per cent. of the effective power of the water, and are liable to be interfered with during the rainy season by back water, yet they are so much preferred by the native community to any more complicated arrangement, that every attempt to supersede them by machinery of European forms has signally failed. The only one of the latter, which appears likely to compete successfully in native estimation with the present form of wheel, is the turbine, which it is intended to introduce into general use.

The following statement shews the annual income from mills :—

4.—*Statement of annual mill rent on canals west of the Jumna.*

1822-23 .....	3,026	13	6	1836-37 .....	26,894	10	3
1823-24 .....	6,868	10	0	1837-38 .....	5,782	0	9
1824-25 .....	3,964	5	4	1838-39 .....	9,732	7	10
1825-26 .....	2,991	3	11	1839-40 .....	14,566	8	8
1826-27 .....	3,682	13		1840-41 .....	9,524	0	6
1827-28 .....	11,676	10	9	1841-42 .....	8,203	14	3
1828-29 .....	16,267	0	6	1842-43 .....	9,882	11	9
1829-30 .....	19,786	3	0	1843-44 .....	12,598	13	3
1830-31 .....	19,464	0	0	1844-45 .....	8,220	0	3
1831-32 .....	19,002	3	7	1845-46 .....	13,250	7	11
1832-33 .....	19,238	2	3	1846-47 .....	14,709	15	5
1833-34 .....	13,882	4	6				
1834-35 .....	18,294	9	9	Grand Total...Rs.	3,14,348	4	2
1835-36 .....	22,837	3	7				

Mill rent, it will be seen, varies much. It is mainly dependent on the demand for irrigation, and when that is great, the supply of water for the mills is necessarily small. The return to the state on capital invested in mills has however been very great—the total expenditure having been Rs. 53,410-8-7, and the average revenue, as shown in the statement, being nearly 23 per cent. per annum.

The pastoral villages in the district of Hissar depend entirely on the canal for the means of watering their cattle; and a small revenue is derived from this source. All irrigating villages, paying revenue above 100 rupces per annum, are allowed to water their cattle, and to fill their village tanks, free of charge. The revenue from watering cattle is shown in the following statement:—

5.—*Statement of annual rent from watering cattle on the Western Jumna canals.*

1828-29 .....	3,772	10	8	1839-40 .....	2,286	13	2
1829-30 .....	3,568	7	10	1840-41 .....	1,955	13	2
1830-31 .....	2,968	12	2	1841-42 .....	1,551	1	8
1831-32 .....	4,210	9	7	1842-43 .....	1,172	5	2
1832-33 .....	3,390	2	5	1843-44 .....	1,680	4	0
1833-34 .....	1,257	3	11	1844-45 .....	2,079	7	2
1834-35 .....	1,669	6	7	1845-46 .....	2,203	8	3
1835-36 .....	2,145	15	6	1846-47 .....	1,687	0	0
1836-37 .....	2,197	1	7				
1837-38 .....	760	3	6	Grand Total...Rs.	43,394	9	4
1838-39 .....	1,838	15	3				

Although the Western Jumna canals are not used for boat navigation, a large quantity of timber, the produce of the forests of Deyrah Dhún, is annually rafted from the head to different points along the canals. The transit duties are exceedingly moderate; and the improvement in the condition of the people in the canal districts is very strikingly illustrated by the largely increased consumption of timber among them, in the construction of substantial and comfortable dwelling houses. The interruption of the free course of the Jumna by the bunds for maintaining the supply of the canals, east and west of the river, forces the whole of the river traffic into the Western Jumna canal for some months of the year. A considerable portion returns to the river by a short land carriage at Chilkannah Ghát, and the remainder passes southward. It is proposed by Major Baker to make a branch, so as to connect the canal and the river, and thus secure continuous water carriage for the rafts,—an unexceptionable proposition, provided the arrangement could be effected by means of a still water channel, thereby reducing the waste of water to a minimum. Water is however so precious for irrigation, and the supply of the Jumna is so closely adjusted to the demands of the canals for this purpose, that any plan which involves the loss of water ought not to be thought of. The detail of transit duties is shewn in the following statement:—

6.—*Statement of transit duties on the Western Jumna canals.*

1820-21 .....	14	4	0	1836-37 .....	3,365	0	0
1821-22 .....	84	4	0	1837-38 .....	6,048	9	5
1822-23 to { .....	0	0	0	1838-39 .....	8,228	11	4
1825-26 } .....				1839-40 .....	6,539	5	1
1826-27 .....	500	4	0	1840-41 .....	9,730	4	3
1827-28 .....	1,013	1	10	1841-42 .....	11,505	15	8
1828-29 .....	1,187	1	10	1842-43 .....	7,934	14	9
1829-30 .....	1,932	10	4	1843-44 .....	5,570	12	6
1830-31 .....	2,132	8	4	1844-45 .....	6,508	10	8
1831-32 .....	2,061	15	0	1845-46 .....	7,830	0	4
1832-33 .....	1,611	8	7	1846-47 .....	6,799	9	1
1833-34 .....	2,950	1	6				
1834-35 .....	3,288	9	5	Grand Total.....	98,911	10	6
1835-36 .....	1,993	9	0				

The eastern appreciation of the luxury of shade, as evidenced in the Sunnud of the Emperor Akbar quoted before, led to the banks of the canals being planted with trees of various kinds; but with the exception of a few varieties of ficus, these have all now perished, thus sharing the fate of those which lined the great imperial road from Agra to Lahore.

The formation of plantations early occupied the attention of the British superintendents. Something was done by Captains Blane and Tickell; but it was left to Colonel Colvin to proceed systematically in this useful duty. An allowance originally of 2,000 Rupees, afterwards increased to 3,000 Rupees, per annum, was allotted to the plantations; and they have been spread over all parts of the canals to which water could reach. The trees planted are chiefly the Sissú, the Toon, the Kikur, the Cirrus, the Saul, and the Teak, all furnishing wood of value for economical purposes. The revenue derived from the plantations by sale of produce, although not large, has more than covered all expenditure upon them; and their ultimate value will be very considerable. The details of the kind, number, and estimated present value of the trees on the 30th April, 1847, are shewn below:—

Kikur.....	91,520	Cirrus .....	13,966
Bambus .....	4,420	Sissú .....	1,84,252
Jamun .....	6,914	Toon.....	35,187
Kutchna.....	1,771	Sundry .....	9,990
Mangoes .....	1,060		
Mulberry.....	18,746		
Nim .....	7,126		
		Total...	3,75,252

The estimated value of these trees is Rs. 5,66,998-5-4, and the total expenditure by Government up to the present time amounts to only Rs. 27,363-5-7, or about  $\frac{1}{4}$ th of the revenue derived from the plantations, as shewn in the annexed statement:—

7.—*Statement of Revenue from sale of Wood, Grass, &c., from the Plantations of the Western Jumna Canals.*

1820-21 .....	635	11	0	1828-29 .....	1,289	8	8
1821-22 .....	1,180	9	4	1829-30 .....	1,142	15	4
1822-23 .....	741	7	11	1830-31 .....	1,265	4	8
1823-24 .....	656	0	10	1831-32 .....	2,127	7	0
1824-25 .....	545	7	7	1832-33 .....	2,651	2	11
1825-26 ... ..	370	9	9	1833-34 .....	3,894	6	11
1826-27 .....	713	18	11				
1827-28 .....	1,460	13	9	Carried over...	Rs. 18,675	7	7

Brought forward...	18,675	7	7	1842-43	.....	6,756	12
1834-35	.....	3,682	2	10	1843-44	.....	4,827 5
1835-36	.....	4,957	11	9	1844-45	.....	5,149 11
1836-37	.....	2,245	6	0	1845-46	.....	7,056 0
1837-38	.....	5,221	8	8	1846-47	.....	10,167 10
1838-39	.....	6,171	4	2			
1839-40	.....	4,822	14	10	Grand Total...	90,822	6 4
1840-41	.....	5,481	6	0			
1841-42	.....	5,607	8	7			

The only remaining source of revenue is from fines levied for breach of Canal Regulations. The value of water, especially during seasons of drought, leads to frequent infractions of the rules for protecting it, and for insuring its equable distribution, while the natural carelessness of native cultivators causes constant wastage, by neglect of their water-courses or other means. For the punishment of offenders in these and other ways, the Superintendent of the Canal and his assistants are vested with the powers of Joint Magistrates under Act VII. of 1845. The annual amount of fines is given below :—

*8.—Statement of Fines for breach of Regulations on Western Jumna Canals.*

1820-21	.....	504	8	5	1835-36	.....	2,603	13	4
1821-22	.....	911	8	2	1836-37	.....	2,930	5	3
1822-23	.....	1,939	2	10	1837-38	.....	9,480	8	9
1823-24	.....	1,882	3	8	1838-39	.....	5,783	12	0
1824-25	.....	1,082	8	8	1839-40	.....	6,188	2	2
1825-26	.....	2,423	4	4	1840-41	.....	6,077	13	0
1826-27	.....	3,283	1	6	1841-42	.....	4,632	9	6
1827-28	.....	4,471	1	6	1842-43	.....	6,218	1	0
1828-29	.....	2,847	6	2	1843-44	.....	5,760	14	3
1829-30	.....	2,801	12	4	1844-45	.....	6,341	8	2
1830-31	.....	2,508	9	6	1845-46	.....	7,753	4	6
1831-32	.....	2,403	2	10	1846-47	.....	6,991	2	9
1832-33	.....	3,410	4	5					
1833-34	.....	6,064	11	3					
1834-35	.....	4,303	2	10					
						Grand Total...	1,11,658	2	4

Having now given sufficient details of the revenues of the Western Jumna Canals, we must notice the expenditure upon them. This is divisible under three heads, viz. original works, including all new works of every kind; the regular establishment, being the salaries of the various classes of officers, employed in the executive, revenue, and police departments; and current repairs, which are the expenses incurred in the maintenance of the works in a state of efficiency. We annex a statement of the expenses under these heads, from the restoration of the canals to the present time, adding for comparison a column showing the total direct revenue for the same time :—

9.—Statement of Expenditure and Revenue on the Western Jumna Canals.

	Original works.			Establishment.			Current Repairs.			Total Expenditure.			Total Revenue.			Deficiency.			Surplus.		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
To end of May 1821.	1,42,164	10	9½	52,264	9	11	5,319	13	7½	1,09,749	2	4	16,376	4	...	1,82,873	14	4	...	...	...
1821-22	...	...	...	19,095	9	4	6,586	11	6	25,682	4	10	26,794	14	5	...	...	...	1,112	9	7
1822-23	...	...	...	27,612	15	6	9,303	2	3	36,916	1	9	26,265	18	3	10,650	4	6	...	...	...
1823-24	...	...	...	43,815	5	7½	0,743	10	6	50,559	0	1½	45,422	4	7	5,186	11	6½	...	...	...
1824-25	...	...	...	53,381	2	5½	4,181	12	5	57,562	14	10½	52,238	16	2	25,323	15	8½	...	...	...
1825-26	...	...	...	59,029	9	2½	4,580	4	5	63,609	13	7½	54,159	8	9	9,450	4	10½	...	...	...
1826-27	4,141	10	...	64,484	13	2	6,830	12	5	75,457	3	7	42,155	...	7	33,802	3	...	...	...	...
1827-28	18,145	9	10	73,141	7	7	7,286	13	8½	98,575	15	1½	62,782	10	8	45,793	4	5½	...	...	...
1828-29	...	...	...	74,216	1	1	9,661	9	1	83,877	10	2	78,316	6	5	6,561	3	9	...	...	...
1829-30	4,938	14	...	74,851	15	7	10,435	9	3	90,226	6	10	82,607	...	10	7,819	6	...	...	...	...
1830-31	...	...	...	77,121	1	1	16,252	14	2	93,378	15	3	86,039	3	1	7,394	12	2	...	...	...
1831-32	...	...	...	79,718	14	7	20,401	5	11	1,00,120	4	6	80,881	10	11	19,283	9	7	...	...	...
1832-33	...	...	...	82,242	5	7	22,939	8	5	1,05,201	14	0	96,111	15	10	9,089	14	2	...	...	...
1833-34	72,010	15	4	81,100	...	3	21,402	14	8	1,74,513	14	3	1,76,831	4	7	...	...	...	2,317	6	4
1834-35	90,278	8	8	77,646	8	4	36,165	5	3	2,04,090	6	3	1,45,253	14	8	58,836	7	7	...	...	...
1835-36	6,22,222	9	3½	78,949	5	...	25,657	8	6½	90,768	11	11½	1,45,141	...	5	5,81,688	6	5	...	...	...
1836-37	3,883	7	6	65,492	5	5	21,892	14	10½	...	...	...	1,90,809	6	4	...	...	...	...	...	...
1837-38	31,743	2	1	58,727	7	2	34,804	7	4	1,25,275	...	7	2,99,670	12	6	...	...	...	1,00,040	10	5½
1838-39	46,044	...	11	57,201	10	4	21,073	11	5	1,24,319	6	8	2,21,400	1	10	...	...	...	1,74,393	11	11
1839-40	...	...	...	54,855	13	10	27,758	...	8	88,176	12	6	2,58,826	10	9	...	...	...	97,080	11	2
1840-41	31,181	1	7	57,066	8	5	25,785	11	3	2,14,038	5	3	2,88,587	4	2	...	...	...	1,70,849	14	8
1841-42	12,180	15	9	55,425	14	8	28,197	9	7	95,741	8	0	2,94,572	9	3	...	...	...	1,74,553	14	11
1842-43	25,115	14	...	53,104	15	11	43,915	4	5	1,22,136	2	4	3,11,265	7	10	...	...	...	1,98,898	1	3
1843-44	8,408	11	9	59,721	3	0	31,712	13	9	99,842	14	6	2,90,993	10	5	...	...	...	1,89,129	5	6
1844-45	2,639	6	8	67,069	11	3	89,689	14	5	1,59,398	15	11	2,66,311	15	1	...	...	...	1,91,150	11	11
1845-46	17,184	...	5	68,238	1	4	62,599	2	4	1,47,981	4	1	2,98,876	13	3	...	...	...	1,00,312	15	2
1846-47	56,769	6	4	71,859	4	0	53,976	10	6	1,82,605	4	10	3,02,885	3	3	...	...	...	1,50,895	9	2
Total...	11,94,055	14	8	16,87,484	11	7½	6,55,138	2	8	35,36,628	12	11½	42,06,077	14	10	10,01,798	6	½	16,71,347	80½	...

The Establishment of the Western Jumna Canals is necessarily large. Their united length is 445 miles, exclusive of the main or first class water-courses, commonly called Rajbuhars, which, as well as the branch canals, are under the executive charge of the Canal Officers. With the minor, or village, water-courses no farther interference is exercised, than to require the proprietors to maintain them in such condition, as that no wastage of water, or interruption to the communications of the country, shall take place.

The general control in all departments is vested in the Superintendent, whose duties are of a very miscellaneous description. As the Executive Engineer, all works are designed and constructed by him under the authority of the Military Board, and of the Superintendent of Canals in the North Western Provinces. As Collector of Revenue, he realizes by means of native local Agents, the various rents, formerly detailed, under the authority of the Sudder Board of Revenue, and of the Commissioner of the division, to whom, in his capacity of Deputy Collector, he is subordinate: and, as Canal Magistrate, he has to protect the water and works under his charge from injury, his orders in this department being subject to appeal to the Sessions Judge. He has therefore many masters and many duties; but the former are generally liberal in their views, and, so far as may be, indulgent in their control, while the latter, though sometimes harrassing and always laborious, are most interesting and attractive to all who love their profession. The combination of powers in the person of the Superintendent is found to be productive of the best possible effects; his control of the revenue re-acts in the department of works, by securing for him a legitimate influence among the people; and the entire separation of the canal from the local civil jurisdictions prevents, except in extreme cases, all collision, and secures cordial but independent co-operation. It might to a certain extent simplify accounts, and be a slight relief to the people in a single form, to consolidate the land and canal revenues, and to collect them by means of the civil establishment; but this arrangement is open to so many objections, and would produce so much embarrassment and difficulty in carrying on the duties of the canals, that, we are certain, its introduction would be followed by consequences far too injurious to the interests of the state and the people, to be in any degree compensated for by the trifling benefit to be anticipated from it.

Three assistant superintendents are in subordinate charge of divisions of the canal; and under them nine or ten European overseers, with the requisite native establishments, carry on the executive duties.

For revenue purposes the canals are divided into ten districts, to each of which a native officer, called a Zilladar, with an adequate establishment, is appointed. The extensive introduction of the contract system, whereby the water rent is fixed for twenty years, reduces the interference of these revenue officers with the people to a minimum. Their pay is however much too small, considering the powers with which they are invested; and however strongly amiable enthusiasts in high places may urge the selection of incorruptible men, it is not in human nature that power and poverty should co-exist, and Government has no right to expect integrity without paying for it.

The surplus revenue of the canal could be drawn upon in no more beneficial manner, than to brighten the prospects of this class of men, by making their incomes commensurate with their responsibilities and position.

The subordinate police establishment consists of chokidars, stationed at intervals of two or more miles on the canal banks. These men have charge of the works and the water, and it is their duty to see that neither sustain any damage. The chokidars in charge of irrigation have great opportunities of illicit gain; and to mention that they receive from Government the bare subsistence of 4 or 5 Rupees per month, is sufficient to prove that such opportunities are not neglected.\* They are in fact just as scurrup as all our other subordinate native establishments, and are neither better nor worse than their neighbours.

We annex a condensed abstract of the establishment of the Western Jumna Canals :—

\* It would indeed be preposterous, either to expect, or to believe, that men, invested with the prestige of office, and having opportunities to make illicit gain with impunity, should keep their hands clean, on a monthly salary of 5 Rs. : but recent and flagrant examples have shown that, whether Government give five Rupees or five thousand, whether it employ poor native chokidars or European gentlemen high in place, it must find some more searching process, than any increase of salary, for ascertaining which of its servants it can trust and honor,—and which of them it should forward to Botany Bay. The cry of oppression, and the tears of the widow and the orphan, should give energy to the search.

## 10.—Abstract of Establishment of Western Junna Canals.

EXECUTIVE.				REVENUE.			POLICE.		
<i>Europeans.</i>				<i>Europeans.</i>			<i>Europeans.</i>		
RS.	A.	P.		RS.	A.	P.	RS.	A.	P.
1 Superintendent.....	600	0	0	1 Superintendent.....	0	0	1 Superintendent.....	0	0
1 First Assistant .....	300	0	0	3 Assistants .....	0	0	3 Assistants .....	0	0
1 Second ditto.....	200	0	0	<i>Natives.</i>			<i>Natives.</i>		
1 Third ditto.....	325	0	0	3 Writers .....	150	0	3 Naib Jemadars .....	27	0
2 Conductors.....	371	12	0	2 Darogahs .....	145	0	9 Duffadars .....	54	0
2 Overseers.....	170	0	0	10 Zilladars .....	320	0	4 Chokidars .....	20	0
5 Assistant ditto.....	325	0	0	1 Treasurer .....	20	0	76 Burkundazes .....	304	0
<i>Natives.</i>				1 Munshi .....	50	0			
3 Writers.....	225	0	0	3 Accountants .....	42	0			
3 Accountants.....	45	0	0	7 Assistant ditto .....	80	0			
7 Assistant ditto.....	70	0	0	8 Measurers .....	48	0			
11 Sowars.....	170	0	0	32 Sowars .....	480	0			
27 Chuprassis .....	138	0	0	58 Chuprassis.....	313	0			
10 Chokidars.....	41	0	0	129 Chokidars .....	513	0			
35 Klashes .....	176	0	0						
8 Bricklayers .....	62	0	0						
8 Carpenters .....	78	0	0						
7 Blacksmiths .....	70	0	0						
4 Boatmen.....	28	0	0						
4 Dāk Hurkurahs.....	96	0	0						
2 Bunneas.....	15	12	0						
Total monthly expenses	3,526	8	0		2,161	0		405	0



The first point of interest this statement enables us to determine is the proportion of the irrigated to the unirrigated areas in the different districts to which it applies. We will refer this proportion to the total areas, as being most convenient, and we find it to be as follows :

	Total area in acres.	Irrigated area in acres.
In Paníput, as .....	625,339	to 341,483 or, as 1 to 0.52
Delhi, as .....	300,107	to 85,006 or, as 1 to 0.28
Rohtuck, as .....	836,186	to 220,272 or, as 1 to 0.27
Hissar, as .....	2,022,453	to 212,241 or, as 1 to 0.1

From these results it appears that a little more than one-half of the whole district of Paníput is under the influence of the canals, while in Delhi and Rohtuck the proportion is reduced to one-third, and in the great sterile tract of Hissar it amounts to one-tenth.

It is curious to compare these results from Indian canals with those obtained in Austrian Italy, the only part of the world where canals strictly similar to those of the North Western Provinces are found. Referring to printed papers on irrigation in the Lombardo-Venetian kingdom, obtained from the India Board, and now before us, we learn that, in the country between the rivers Ticino and Adda, the land is irrigated to the extent of 8-tenths of its surface ; between the Adda and the Olisio, about 5-tenths ; and lower down, towards the junction of the Po and the Mincio, about one-tenth. While therefore the first-mentioned Italian tract exceeds in extent in irrigation, as compared with surface, any of our districts west of the Jumna, the second corresponds closely with zillah Paníput, and the third with Hissar. Delhi and Rohtuck are intermediate between the two latter of the Italian districts, being irrigated to the extent of nearly 3-tenths of their surface.

The irrigated areas above referred to include the total areas of all villages using canal water. But no village actually waters its whole area, parts being in fallow or waste, or occupied by inferior crops not requiring water. The proportion of the total area of an irrigated district actually watered is a point of much interest ; and, as we shall have occasion to employ it hereafter as a means of estimating the capabilities of projected canals, we give here the result of our enquiries on the subject.

Canal revenue being levied only on land actually watered, the measurements for this purpose are available as guides, and where contracts exist and no measurements are required, the money value of these contracts furnishes the means of making a fair approximation to the watered area. On these data our calculations are based, and we find the results to be as follow :—

Total irrigated area in acres. Area actually watered in acres.

In Paniput, as .....	311,493 to 127,100 or, as 1 to 0.37
Delhi, as .....	85,906 to 34,686 or, as 1 to 0.4
Rohtuck, as.....	220,272 to 84,653 or, as 1 to 0.38
Hissar, as.....	212,211 to 103,062 or, as 1 to 0.49

From these rates we may therefore conclude, that, as an average result, irrigating villages west of the Jumna actually water annually from one-half to one-third of their total areas. The best watered of all in proportion to its irrigable area is the once sterile district of Hissar, the chief towns of which were found in 1807 to be literally without an inhabitant. The canal here has almost called into being an active, contented, and prosperous peasantry.

In passing now to the consideration of the Government revenue, and the population, we have to note first, that the calculations of these are based on the total areas of villages of the different classes, as shewn in the statement. Their results exhibit in a very clear and decided manner the beneficial influence of canal irrigation. The Western Jumna Canals had so nearly attained their maximum of irrigation before the land settlement took place, that but few villages have been brought under their influence since that event. Still, the increase of land revenue due to the use of irrigation is to be traced, as we find the average per square mile on villages irrigated since the settlement to be Rs. 741, while that in unirrigated villages is only Rs. 355.

We are also enabled for the first time to give form to a claim, always made by Canal Officers—to have credit given to their works for whatever increase of land revenue may be derived from canal villages, as compared with villages not enjoying the same advantages. The claim is a perfectly legitimate one, as the increase in question is due solely to the existence of the canals. Its amount in the case of the Western Jumna Canals may be calculated readily from the data in the statement; and the calculation is of sufficient interest to warrant our giving it here.

12.—*Statement of increase of Land Revenue due to the Western Jumna Canals.*

Paniput...	404 Sq. miles,	at 1179-966 =	*213 Rs per square mile,	Rs. 86,052
Delhi.....	92 "	at 1394-850 =	544 "	50,048
"	9 "	at 1137-850 =	287 "	2,583
Rohtuck...	249 "	at 780-484 =	305 "	75,943
"	11 "	at 565-484 =	81 "	891
Hissar ....	247 "	at 485-156 =	320 "	81,263
"	3 "	at 200-156 =	44 "	132

Total increase of land revenue, (*Jumna*) .....Rs. 2,96,912

\* On referring to the Statement, p. 103, it will be seen that for Paniput the average Jumna per irrigated square mile is Rs. 1,179, and per unirrigated square mile, Rs. 266. &c. The difference therefore, Rs. 213, is the increase per square mile.

This sum, added to the direct canal revenue as shown in Statement 9, gives a total increase of Rupees 5,99,799, or very nearly £60,000 per annum; and, supposing £17,000 to be expended in the canal and civil department, we have a net income of £43,000 on an invested capital of £119,400, being 36 per cent.

Of the total land revenue of the four districts of which returns are before us, the sum of Rupees 9,37,912, out of Rupees 21,61,298, is derived from canal villages, and may be regarded as beyond all risk; the remainder, Rupees 12,24,386, is subject to the vicissitudes of the seasons, and, in the event of a failure of the periodical rains, would be much decreased, if not wholly annihilated; and the population, from whom it is drawn, must be supported by the Government, migrate, or perish.

The excess of population in irrigated over unirrigated villages is very marked. The rate per square mile in Paniput and Delhi is high,\* but not higher than in the analogously situated plains of Austrian Italy, where in the Delegation of Milan the rate per square mile is 471.6, and but little inferior in Pavia, Lodi, and other richly cultivated and well-irrigated localities.

The rates in the Western Jumna districts are given below:—

In Paniput, as.....	317 to 245 or, as 1 to 0.8
Delhi.....	448 to 290 or. as 1 to 0.67
Rohituck.....	276 to 259 or as 1 to 0.9
Hissar.....	142 to 87 or as 1 to 0.6
Average rates.....	275 to 158 or. as 1 to 0.57

Thus villages irrigating from the canal support on an average a population nearly 2.5ths greater than that of villages not so irrigated.

We have now completed our account of the canals west of the Jumna. We have shewn them to be equally profitable to the Government, and to the community, securing the revenue of the one, and the permanent prosperity of the other; we have adverted to the sole drawback on their utility, namely, their being occasional causes of local sickness, to the precise extent of which as developed by the canal medical committee we will hereafter have occasion to give our attention. Taking them however, all in all, we have no hesitation in stating our conviction that they are works of which the British Government may well be proud; and its pride in them will best be shewn by pressing forward every feasible improvement, until they shall be made in all respects, what they now are in many, material blessings of the highest order to the people of the districts through which their fertilising waters flow.

The Eastern Jumna Canal, which we have now to describe, was surveyed, with a view to active operations, in 1822, by Lieuten-

\* See Statement 11, p. 103.

ant Debude of the Engineers. This officer however was removed to other duties immediately on the completion of his field work, and was succeeded by Colonel Robert Smith of the Engineers, under whose orders the various works on the canal, as originally projected, were completed in the year 1830.

The Eastern had so far the advantage over the Western Jumna Canals, that all the work considered necessary, the dams, bridges, escapes, &c. were finished, before any water was admitted. It is not, however, to be concealed that Engineer officers had at that time most imperfect ideas of hydraulic works, and had no expectation of the difficulties in store for them.

The general alignment of the Eastern Jumna Canal was good: it occupied the highest land between the rivers Jumna and Hindun; it avoided entirely the "Khadir" or valley of the former river, and, in its northern and southern portions, attention was paid to avoiding tortuosities of channel as much as was considered practicable. In the central part, however, the ancient bed was merely cleared out, and nearly all its vicious twists and turns left as of old.

As to the regulation of the slope of the bed, it was not thought of, or, if thought of, was not attempted; and the method of excavation was on that primitive plan, of which an apposite illustration will be found in the following anecdote. Some four or five years ago, during one of our many wanderings through canal districts, we came, one pleasant morning, to the banks of a small stream, on which we found a Civilian, now in high office, but then the active Joint Magistrate of the zillah. He was looking with no very agreeable expression of face at a new cut for the stream which he had made, but apparently without success. "What is wrong with your work?" we asked. "I don't know," was his reply; "but this perverse river won't run in the course I have made for it. I am sure it is wide enough." "True," we remarked, "but that is not the only thing necessary."

"Oh! but" said he, interrupting us hurriedly, "I have laid it out with this"—pointing to a scientific looking surveying compass, with which he was begirt.

"Even that," we returned, "is not enough, have you thought of the slope?" "Slope!" he replied, "what do I know about slopes?"

"They are useful however when you want water to flow. What orders did you give to your work people about the depth of the cut?"

"The depth? Oh, I told them to *dig a yard*—that's all."

Precisely thus were the original excavations of the Eastern

Jumna Canal carried on. The bottom of the bed was fixed at four feet beneath the surface level of the country, without reference to the natural fall, which in the northern and southern parts of the canal was excessive. The case of the canal was the converse of that of the river; as the water, once admitted into the bed of the former, flowed only too rapidly. .

On the 3rd of January, 1830, the canal was opened for the first time; and by the 20th of that same month, nearly every bridge, north of Saharunpūr and south of Surrowli, was in imminent peril of total destruction. Rapids established themselves at different points on the steep slopes between the bridges; and working back, as such rapids invariably do, they exposed the foundations, and in course of time would have completely undermined the works.

In addition to the injuries threatened to the masonry works, an evil even more formidable exhibited itself in the deposit of immense quantities of sand and river silt, brought from the upper portion of the canal, along the whole line of lower levels. The bed of the canal was here being rapidly elevated, and, as the mischief was a progressive one, continual raising of the embankments was necessary to maintain the canal in its bed.

The task of rectifying these evils had devolved upon Lieut. (now Lieut.-Col.) P. T. Cautley, who, being assistant to Colonel Smith, had succeeded that officer on his departure for Europe in bad health.

Checking the effects of the retrogression of the levels on the bridges by means of rafts of timber moored in rear of such of these works as were most immediately threatened, Lieut.-Col. Cautley lost no time in submitting a comprehensive project for remodelling the slope of the canal by the introduction of masonry descents, or falls. Looking to the general distribution of the slope of the country on which the Eastern Jumna Canal is carried, it was found that, while the total fall from the head of the canal to Selimpūr, where it rejoins the Jumna, was 421.07 feet in a distance of nearly 134 miles—186.37 feet of this fall occurred in the first 28½ miles, and 45.6 feet in the last 11 miles, the remaining 189.11 feet being distributed over the intermediate distance of nearly 94 miles. There were therefore two steps of descent, the northern, dependent on the vicinity of the Himalayas, and the southern, on the drop of the canal near its terminus into the valley of the river Jumna.

The first object was of course to regulate the excessive slopes of these two steps.

In determining the rate of inclination to be given to the bed of the canal, two points had to be considered: 1st, That the

slope should be sufficiently rapid to ensure such velocity of current as would prevent the growth of aquatic plants in the canal, an evil of a serious nature in a tropical country; and 2d, that it should not be too great for the adhesive powers of the bed itself, lest violent erosive action should result, and the very evil it was desirable to remedy should continue to exist. It was found that, on such soil as the canal bed presented, a slope ranging from 17 to 24 inches per mile would meet both these contingencies.

With exception of the first ten miles from the head, on which no danger was anticipated, the bed of the canal being there of boulders or hard shingle, the slope of the northern step was regulated by the construction of nine masonry falls, of which one had a descent of 15 feet, three of 8, two of  $7\frac{1}{2}$ , and three of 4 feet each.

The excess of slope in the southern steps was overcome by 4 falls, two being of 8 feet, one of  $7\frac{1}{2}$ , and the last of 6 feet.

At a later period the slope of the portion of the canal, intermediate between the two steps, was regulated by two falls of 4 feet each; and in course of time the construction of four more will perfect the regimen of the canal bed.

The construction of these works was attended with the most gratifying success. Colonel Cautley's theory was that the sand or silt, whereby the lower levels of the central portions of the canal were being raised, was derived entirely from the erosive action of the stream on the bed in the northern division; and, that so soon as this action was checked by the masonry falls, the silt deposits would be carried forward by the force of the current, and ultimately discharged into the Jumna. This theory was satisfactorily verified: all deposits have long since ceased, and those formerly in existence have on a distance of nearly twenty miles entirely disappeared. In the southern part of the centre division of the canal, the movement of the deposits is checked by the tortuosities of the channel, and other circumstances; but no very serious inconvenience is caused thereby.

The embankments raised to retain the canal in its bed are of the most massive proportions. They are about thirty or forty miles in length, and the canal flows between them at heights from 6 to 10, and even 12 feet, above the surface of the country. It was no unusual thing in former times for the canal to burst these embankments, and to convert the whole adjoining country into one wide waste of waters. Now, happily, such accidents are exceedingly rare, although they do still occasionally occur to keep the Canal Officers on the alert.

The northern division presented its own peculiar difficulties, in the control of the mountain drainage which crossed the canal; and here the struggle to maintain the works was even more arduous than on the Western Jumna Canals.

In addition to the floods, which entered the canal heads from the Jumna and the lateral Himalayan drainage north of Nyashur, the point at which the excavated channel commences, the course of the canal was intersected by four first-class rain-torrents, the Raipur, the Intunwala, the Nowgong, and the Muskurra rivers.

The floods of the Jumna and the lateral drainage from the Sub-Himalayas, north of Nyashur, were disposed of by means of the Fyzabad and Nyashur dams—works similar to that at Dadúpúr, described in Major Baker's report. The Raipur nala had an escape outlet, provided for it in the canal bank. The Intunwala and Nowgong rivers, uniting in front of the Nowgong dam, passed over that work; while the Muskurra was disposed of by a fourth dam at Kulsia.

To each of these works a long and interesting history is attached; but we must content ourselves with stating here that, amidst many difficulties and not a few formidable accidents, they were maintained in a state of perfect efficiency by Colonel Cautley up to 1813, and subsequently, on this officer's removal, to the higher appointment of Superintendent of Canals in the North West Provinces, by his assistant and successor, Lieutenant R. Baird Smith of the Engineers.

Colonel Cautley's valuable report abounds with suggestions for the improvement of the Eastern Jumna Canal, nearly the whole of which have been carried into effect since his executive charge of it ceased.

Much still remains to be done in restoring the drainage of the country in the centre division, which for about five and twenty miles is the blot on the fair face of this beautiful canal; for most beautiful in all other parts it truly is, with its broad road smooth as an English lawn, its double rows of trees drooping over the stream, its long graceful sweeps, its rich bordering of most luxuriant crops, its neat station houses, and the peculiar care with which all its works are maintained. It is certainly one of the most interesting and attractive of Indian sights. The gem of the whole is the southern division, where, for nearly sixty miles, the visitor passes through a country which is the Garden of the North West, and finds constant cause to admire the beautiful, although limited, scenes, that every turn of the canal brings before him. Some of the old trees, cherished and preserved with an almost religious veneration, are the finest we have ever seen.

Of these some are doubtless contemporaries of the original constructors of the canal, as they were of large dimensions when it was re-opened by our Government. We hope that all these "our ancient friends" are destined to live and die where they now are, even although some *may* think them too near the water's edge; and we trust that no Canal Officers will ever be found so mercilessly utilitarian, so dead to all sense of the beautiful in nature, or the suggestive in thought, as to lay axe to the root of one of these noble old trees, linked as they are, and in all sensitive minds ever must be, to the memories of great men and remarkable times.

The state of efficiency, in which this part of the canal is maintained, is due to its excellent local officer, Mr. H. B. Brew, who, commencing life in the ranks, has by pure force of character, high professional qualifications, and unimpeachable integrity, earned for himself the respect and friendship of every officer under whom he has served, and such reward as Government, ever slow to acknowledge "the gold" that has not the "guinea stamp," has thought fit to grant.

The assessment system of the Eastern Jumna Canal is based exclusively on measurement. No contracts have yet been introduced, for the sufficient reason, that while such incessant changes of the levels of the bed were in progress, no contract could be maintained with even an approximation to justice. The water is distributed to the zemindars, partly by cuts from the main canal, but chiefly by means of what are locally called "Rajbuhas," or principal water-courses, the joint property of the different villages, which have combined to pay for their construction.

Rajbuhas are originally constructed, and subsequently maintained by the Canal Officers. The requisite funds are supplied in the first instance by the Government, and are recovered from the villages by one or more payments, proportionate in amount to the benefit each proprietary community derives from the work.

The system originated on the canals west of the Jumna, where however it has never been carried to any great extent in consequence of local obstructions. East of the Jumna it was peculiarly successful, and, from its commencement in 1836, it continued to extend as speedily as the sum allowed by Government for annual advances would permit. This sum was at first very small, being only 5,000 Rupees per annum; but subsequently it was increased by degrees until, on Major Cautley's delivering over charge of the canal in 1843, it had attained to 30,000 Rupees. Shortly after-

wards a further increase of 15,000 Rupees per annum was authorized, and, with these enlarged resources, Lieutenant Baird Smith continued to carry on the system, until in 1849 about 400 miles of these main channels had been completed.

Meanwhile the advantages of the Rajbaha system had exhibited themselves so clearly, and had received such confirmation from the researches of the medical committee, which established the fact, that irrigation so conducted was liable to none of the evils traceable to the use of private water courses from the main canal,—that the superintendent was encouraged to mature and submit a project for the immediate completion of the general plan, of which the existing channels were unconnected portions. This plan involved the establishment of two chains of Rajbahas, one on each side of the canal, and parallel to it throughout its entire course. The terminus of each Rajbaha was connected with the channel next to it, so that all surplus water from each was carried forward into the others, and brought into use without any loss.

The project received the cordial support of Major Baker, then Superintendent of Canals in the N. W. Provinces, and of the Military Board; Government authorized the necessary advances, amounting to Rs. 4,20,000, with an additional sum of Rs. 30,000 for mills; and the various works were shortly afterwards commenced and carried on with all practicable vigour.

When completed, the Rajbaha system of the Eastern Jumna Canal will consist of 500 miles of channel with all the needful works for cross communication, control of water, regulation of slope, &c., as on the main canal, although on a miniature scale. The canal will then be complete so far as its irrigating capabilities are concerned; and it is calculated that the extent of land actually watered by it will amount to 2,56,000 standard bigas, or 1,60,000 English acres.

The manner, in which the cost of the Rajbahas is distributed among the proprietors, is described in Major Cautley's Report, Para. 239. This however has since been somewhat modified, in accordance with the wishes of the zemindars themselves. The original cost continues to be recovered by letting off a certain number of shares valued at 25 Rupees each to the villages, in proportion to their irrigable areas; but the annual expense of repairs and establishment is recovered by a rate on the land actually watered. Many years often elapse before a village can bring its whole irrigable area under the influence of the canal, and objections were made to paying annual expenses on this total area. The first modification of the system, described by Major Cautley, was

to recover the advances half-yearly, by a rate on the land watered during each Fusil, or harvest. But it was soon found that by far the heaviest share of the expenses fell on the Khuif, or rain crop, and the system was therefore unfair. The advances were then recovered yearly; and this system works to the perfect satisfaction of all the parties interested in it. One farther modification ought to be introduced, by equalizing the rate over the whole canal, instead of having a separate rate for each Rajbuha—especially as these separate rates are very nearly equal in all cases. The average of them might therefore be taken without practical injustice to any one, and with great diminution of the labour in preparing the accounts of between 40 and 50 Rajbuhas, supplying upwards of 500 villages. A general rate of 3 annas per biga, or about 7 pence per acre, per annum, would cover all expenses of maintaining the Rajbuhas; while it is found that the original construction of these works has been effected at a total cost to the proprietors of no more than Rs.  $2\frac{1}{2}$ , or nearly 5 shillings, per acre. The cost of exactly the same class of works on the Italian canals amounts to Rs. 156, or £15-12, per acre. The cultivator in the Milanese therefore pays above sixty times more for his minor works of irrigation, than his Indian brother in the Doab.

The general advantages derived from this system of restricting irrigation to principal channels may be condensed under the following heads:—

1. The delivery of water on the best lines and levels.
2. Efficiency of control over the water by the reduced number of outlets from the main canal.
3. Economy of supply from the prevention of wastage of water by neglect of the zemindars.
4. Maintenance of the drainage lines of the adjoining country.
5. Extension of irrigation to localities to which no private water-courses could reach.
6. Prevention of village disputes by the entire charge of the channels being in the hands of the Superintendent of the Canal.
7. Combination of the full benefit of irrigation with the least possible unhealthiness.

We close our account of the works of the Eastern Jumna Canal, by annexing the accompanying abstract of them:—

## 1.—Abstract of Works on the Eastern Jumna Canal.

	Dams.		Aque-ducts.		Bridges.		Chokies.		Rajbhas.		Canal Irrigation outlets.								
	Masonry.	Box works.	Drainage outlets.	Masonry.	Masonry Piers with Iron Channels.	Regulating.	Masonry with Timber Superstructure.	Inlets.	Canal Escapes.	Workshops.	1st Class.	2d Class.	Office Barracks, Guard Room, &c.	Falls.	Mills.	Number.	Length in Miles.	Masonry.	
North Division.	4	4	1	3	..	3	8	..	6	1	3	5	1	6	3	2	21	12	
Centre Division.	3	..	..	1	3	..	11	13	9	1	..	4	11	1	5	6	23	247	64
South Division.	..	..	..	..	..	..	4	2	9	1	1	5	10	1	3	3	23	197	60
Total..	7	4	1	4	3	3	13	15	24	2	2	12	26	3	14	12	47	465	136

The sources of revenue on the Eastern are the same as on the Western Jumna Canals; the most important being, of course, the water rent. The gradual increase of this from the opening of the canal in 1830-31 is shewn in the following statement:—

## 2.—Statement of Annual Revenue from Water Rent on the Eastern Jumna Canal.

1830-31.....	6,083	5	9	1840-41.....	89,135	14	6
1831-32.....	7,551	2	2	1841-42.....	78,885	8	5
1832-33.....	22,107	0	0	1842-43.....	1,05,064	0	8
1833-34.....	46,964	15	2	1843-44.....	86,147	1	3
1834-35.....	37,918	5	6	1844-45.....	84,786	2	0
1835-36.....	37,081	5	3	1845-46.....	96,534	4	4
1836-37.....	44,308	6	0	1846-47.....	1,07,725	1	9
1837-38.....	91,315	9	1				
1838-39.....	78,014	15	10	Grand Total...Rs.	10,95,166	11	6
1839-40.....	78,543	0	11				

In February 1842, the respective discharge of the Eastern and Western Jumna Canals were measured by their Superintendents acting together, and the results were as follow:

	Cubic Feet per second.
Discharge of Western Jumna Canals .....	2,277
„ Eastern, ditto ditto .....	538
Total discharge of canals .....	2,815
Total discharge of River Jumna....	3,480
Available Surplus..	674

For the year 1842-43, the revenues of the canals from water rent were respectively Rs. 2,79,300, and Rs. 1,07,064. While the discharges therefore were in the proportion of nearly 4 to 1,

the revenues were only as  $2\frac{1}{2}$  to 1; or, in other words, while a discharge of 538 cubic feet per second in the Eastern Jumna Canal realized to Government a water rent of Rupee - 1,07,064 per annum, the same quantity of water in the Western Jumna Canal produced only 65,992 Rupees, being a difference in favour of the former of nearly 8,000 Rupees per 100 cubic feet. If the water employed in the Western were to be economised to the same extent as that in the Eastern Jumna Canals, the revenue of the former, instead of being about 2,80,000 Rupees, would rise to 4,53,000 Rupees per annum. It further appears that of the total supply of the Western Jumna Canals, upwards of one-third, or 869 cubic feet per second out of 2,277, is absolute waste, producing no revenue to Government; making every allowance for this difference between the two canals, it must still be apparent that the wastage west of the Jumna is excessive, and the fact of its existence will strengthen the hands of those who advocate every improvement in the works that can diminish its quantity. Even on the Eastern Jumna Canal there is more waste water than there ought to be; and we do not doubt that in course of time the water now drawn by both canals from the Jumna will be rendered much more valuable to Government than it is at present.

The influence of the famine year, 1837-38, is as marked on the Eastern as we found it to have been on the Western Jumna Canals; and we subjoin a calculation of the gross value of the agricultural produce saved to the community on that occasion by the use of the canal water.

3.—*Statement of Gross value of Crops grown on land irrigated from the Eastern Jumna Canal in 1837-38, the greater part of which land would have been totally unproductive without the use of the canal water.*

KHURIF, OR RAIN CROPS.

12,986 acres of Sugar cane, &c., at Rs 80 per acre ....	10,37,140
4,500 acres of Cotton, at 48 Rs. ditto . . . . .	2,16,000
13,500 acres of Rice, Jowar, &c., at Rs. 38-4 ditto ....	5,16,375

RABI, OR COLD SEASON CROPS.

65,431 acres of Wheat, Barley, &c., at Rs. 48 per acre..	31,40,688
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Total value of crops, Rs., 19,10,503

The gross value therefore of the produce saved by irrigation was nearly half a million sterling, of which about one-tenth, or £50,000, was Government revenue, and the remainder the property of the agricultural community. The united Jumna Canals therefore saved, during the year 1837-38, property to the value of nearly two millions sterling.

The next item of revenue is from mill rent, of which a statement is here annexed:—

4.—*Statement of Annual Revenue from Mills on the Eastern Jumna Canal.*

1830-31.....	884	12	5½	1840-41.....	3,207	9	2
1831-32.....	2,476	10	2	1841-42.....	3,733	12	6
1832-33.....	4,902	15	10½	1842-43.....	6,194	0	9
1833-34.....	4,435	13	4½	1843-44.....	8,178	13	0
1834-35.....	3,335	6	5	1844-45.....	6,045	4	3
1835-36.....	4,728	0	7½	1845-46.....	8,121	15	8
1836-37.....	5,154	11	2½	1846-47.....	7,838	0	6
1837-38.....	5,001	6	0				
1838-39.....	4,358	4	6	Grand Total...Rs.	82,975	12	4½
1839-40.....	4,288	4	2				

The Eastern Jumna Canal mills are precisely the same as those formerly described on the Western Jumna Canals, and have been equally profitable to Government and convenient to the people. The Saharunpūr mills, for example, which were built at a cost of about 4,500 Rupees, are rented by public auction at 12 Rupees per day, and return about 3,000 Rupees per annum to the state, or nearly 67 per cent. The mills are left entirely in the hands of the parties renting them. No interference of any kind is exercised by the Canal Officers; but all questions of price, &c., are left to be adjusted between the renters and the parties using the mills.

The rapid fall of the country, through which the Eastern Jumna Canal passes, renders the water peculiarly available as a prime mover; but as yet corn mills only have been introduced. It is proposed to establish sugar, oil, and saw mills, and although we are not very sanguine as to the result, the experiment is worthy of trial. One thing is certain, that a great deal of valuable time will be lost in the first efforts of officers, who have but the imperfect descriptions in books to refer to as guides in the construction of machinery. Government should assist them by procuring working models of the most approved forms; and with these their progress would be more satisfactory to themselves, and more useful to the parties concerned, than if they are left to blunder on through numerous failures to a success ultimately imperfect, or at least only equal to what their first attempts, aided by good models, might have led to.

The revenue from watering cattle is very trifling, as but few villages irrigate to a less extent than 100 bigas per annum, and all above this standard are free from any charge.

The following statement shows the annual amount of this item:—

5.—*Statement of Annual Amount of Revenue from watering cattle on the Eastern Jumna Canal.*

1830-31.....	2	4	4½	1840-41.....	97	14	0
1831-32.....	107	9	2	1841-42.....	153	14	0
1832-33.....	88	14	5	1842-43.....	82	10	0
1833-34.....	52	5	6½	1843-44.....	137	4	0
1834-35.....	100	12	5	1844-45.....	217	15	0
1835-36.....	63	13	0	1845-46.....	103	8	0
1836-37.....	61	10	0	1846-47.....	305	0	10
1837-38.....	189	18	0				
1838-39.....	104	0	0	Grand Total..Rs.	1,884	11	9
1839-40.....	65	14	0				

One of the first effects of the silting up of the bed in the centre division of the canal, formerly described, was to close the water ways of all the bridges, the water standing in all cases above the crowns of the arches; in not a few, above the road ways, and only kept from submerging the works by the parapets. With such obstructions, navigation by boats was of course impracticable, and even for rafts the difficulties were very great; not so great however as totally to stop the transit. On the contrary, when in 1833, the Superintendent issued an order prohibiting the passage of rafts in consequence of the injury they did to the bridges when being forced through the submerged arches, the remonstrances of the merchants and others were so decided, that the order was cancelled in 1836, and rafting again permitted, on the consideration that the amount of the transit duties would defray the cost of renewing the bridges. In 1846, the whole of the bridges in the centre division, and some in the south, were so remodelled as to give abundant waterway for boats and rafts. The transit duties have since risen, and continue to rise. Boats ply between Delhi and Saharunpúr, as yet only for canal purposes, in carriage of stores of all kinds, but it is hoped that the arrangements for opening the line to the community may soon be perfected.

To combine, in such manner as that both shall be efficient, irrigation and navigation on the Eastern Jumna Canal is not to be expected. The first is so incalculably more important than the second, that when demand for water on the part of the zemindars exists, navigation must yield to it; and there will always consequently be a degree of uncertainty, connected with the use of this line as a navigable one, which will impair its value.

The following statement shows the amount of transit duties:—

6.—*Statement of Annual Revenue from Transit Duties on the Eastern Jumna Canal.*

1831-32 .....	9	7	9½	1841-42 .....	963	2	11
1832-33 .....	11	12	3½	1842-43 .....	522	2	8
1833-34 .....	7	5	2½	1843-44 .....	351	5	11
1834-35 .....	0	0	0	1844-45 .....	280	14	5
1835-36 .....	0	0	0	1845-46 .....	414	10	9
1836-37 .....	88	12	4½	1846-47 .....	609	2	1
1837-38 .....	262	3	0				
1838-39 .....	426	8	1				
1839-40 .....	566	12	7				
1840-41 .....	0	0	0				
				Grand Total...	4,513	0	1

The plantations on the Eastern Jumna Canal were commenced simultaneously with the canal itself, and have been extended systematically from that period up to the present time. The kinds and numbers of the trees in the canal plantations are shewn below:—

Sissú .....	200,870	Teak .....	1,158
Cirrus .....	8,058	Toon .....	15,967
Kikur .....	28,501	Sundry .....	7,410
Nim .....	6,700		
Mulberry .....	9,305	Total...	291,754
Bambus .....	1,908		
Lulloo .....	2,774		

The estimated value of the plantations is 1,46,793 Rupees ; and the total expense incurred by Government in their formation, up to April 1847, is Rupees 22,142-1-2, which sum, as will be seen by the following statement, has been very nearly covered by the sale of wood, &c. from the banks:—

*7.—Statement of Annual Revenue from sale of Plantation produce on the Eastern Jumna Canal.*

1830-31 .....	592	15	3	1840-41 .....	2,470	0	5
1831-32 .....	606	6	2	1841-42 .....	1,615	3	5
1832-33 .....	665	7	7½	1842-43 .....	1,940	7	6
1833-34 .....	773	11	8	1843-44 .....	1,413	12	9
1834-35 .....	815	15	5½	1844-45 .....	1,704		11
1835-36 .....	1,031	9	4	1845-46 .....	1,725	11	1
1836-37 .....	1,168	5	2	1846-47 .....	1,842	0	11
1837-38 .....	1,223	5	2				
1838-39 .....	1,073	9	1	Grand Total...Rs.	21,977	2	10½
1839-40 .....	1,282	8	0				

In addition to the plantations of forest trees, grafted mango gardens have lately been established with the view of introducing a superior fruit into the country adjoining the canal. Of these gardens five are in existence, containing about 300 trees each, and being from three to five acres in extent. The result of their establishment has been very satisfactory ; and, although only one of the number has yet arrived at maturity, they have proved very successful,—the demand for grafts and fruit being much in excess of the means of supply. The native community, for whom they were chiefly intended, have shewn their appreciation of them by purchasing a large number of grafts ; and there is every probability that the intention of Government in sanctioning the project will be fully realized.

We close the details of the revenue of the Eastern Jumna Canal by giving the accompanying statement of the amount of fines imposed for breaches of canal regulations:—

*8.—Statement of Annual Revenue from Fines on the Eastern Jumna Canal.*

1830-31 .....	730	0	3½	1840-41 .....	4,322	8	11
1831-32 .....	1,209	0	8	1841-42 .....	3,785	6	1
1832-33 .....	1,075	13	0	1842-43 .....	3,683	0	3
1833-34 .....	1,270	1	5	1843-44 .....	4,535	4	4
1834-35 .....	1,250	12	1	1844-45 .....	5,736	4	7
1835-36 .....	1,325	1	4	1845-46 .....	3,086	6	11
1836-37 .....	735	10	7	1846-47 .....	3,434	6	7
1837-38 .....	2,847	11	6				
1838-39 .....	2,967	13	0	Total..Rs.	45,807	15	3½
1839-40 .....	3,812	0	0				

We have now to exhibit the expenses incurred in making and maintaining this canal, and shall adopt the same form as was employed for the canals west of the Jumna:—

9.—Comparative Statement of Annual Expenditure and Income on the Eastern Junna Canals

[illegible]

From the first column of this statement it will be remarked how continually, from the first opening of the canal up to the present time, new works have been in progress. Nor is the expenditure on this account at an end. The thorough drainage of the centre division, with several minor works, have still to be accomplished. When these are finished however, the Eastern Jumna Canal will be nearly as perfect as a canal, with some irremediable defects of original construction, admits of being made. Comparing it with the Western Jumna and the first class Italian canals, the following are the results.

Original cost of Western Jumna Canals per mile	Rs.	2,557
Ditto first class Italian Canals .....	" "	72,580
Ditto Eastern Jumna, ditto		5,640
Current expenses of Western Jumna Canals, per mile		310
Ditto of Italian Canals .....	"	444
Ditto of Eastern Jumna Ditto .....	"	477

The very much higher cost of Italian canals is supposed to be due to the necessity for a greater number of bridges and masonry works connected with the distribution of the water, and also to the high price paid for land in Italy—an item which does not appear in the account of the canals of British India, although our mission land revenue is granted by the Government on account of all ground occupied for canal purposes.

That the current expenses in establishments and repairs on Italian, do not exceed those on British Indian, canals in the same proportion as the original cost, is to be traced to the large number of officers of different grades employed in revenue duties on the latter, and also to the much greater difficulties experienced in carrying our canals across the beds of the mountain torrents under the Himalayas.

The duties of the different officers on the Eastern Jumna Canal are similar in all respects to those required from the establishment of the Western Jumna Canals formerly described; and we need not therefore do more now than annex the following abstract:—

## 10. Abstract of Establishment of Eastern Jumna Canal.

EXECUTIVE.		REVENUE.		POLICE.	
<i>Europeans.</i>		<i>Europeans.</i>		<i>Europeans.</i>	
1 Superintendent .....	600	1 Superintendent .....		1 Superintendent .....	
1 First Assistant .....	30				
1 Second Ditto .....	200				
4 Assistant Overseers .....	260				
<i>Natives.</i>		<i>Natives.</i>		<i>Natives.</i>	
4 English Writers .....	195	1 Darogah .....	70	1 Jemadar .....	9
1 Munshi .....	30	1 Treasurer .....	25	3 Duffadars .....	18
10 Mutsuddis .....	78	4 Zilladars .....	140	18 Burkunnazes .....	72
1 Duffadar .....	20	4 Naib Ditto .....	54		
10 Sowars .....	150	5 Mutsuddis (Temporary) .....	35		
2 Native Doctors .....	30	24 Chupprassis .....	118		
1 Jemadar Chupprassi .....	8	3 Ditto (Temporary) .....	15		
10 Chupprassis .....	55	5 Sowars .....	75		
19 Ditto Mate .....	76	7 Measurers .....	35		
2 Bricklayers .....	21	6 Ditto (Temporary) .....	30		
3 Carpenters .....	29				
4 Blacksmiths .....	32				
96 Chokidars .....	344				
3 Klassis .....	14				
48 Dam Builders .....	190				
Total Monthly Expenses .....	2,634		597		99

The statistical researches carried on west of the Jumna were at the same time in progress east of the river; and we shall now, as

briefly as may be, exhibit their results, and the conclusions, as connected with the Eastern Jumna Canal, to which they lead. The following table shows at one view the different details of the subject :

11. Comparative Statement of Population and Government Revenue (Jumma) in the portions of districts in the Meerut Division, irrigated and not irrigated from the Eastern Jumna Canal.		Description.	Area in Acres.	Area in square mile.	Total area in square miles.	Population.	Total Population.	Jumma in Rupees.	Total Jumma in Rupees.	Population per square mile.	Jumma per square mile in Rs.	Average population per square mile.	Average Jumma per square mile in Rs.
Saharanpūr	.....	Irrigated at Settlement	76,842	91	.....	79,488	.....	87,165	.....	879	957	.....	.....
Muzaffernugur	.....	Ditto	85,567	101	.....	58,479	.....	1,24,937	.....	579	1,237	.....	.....
Meerut	.....	Ditto	71,920	84	276	46,084	184,781	1,35,195	3,47,297	546	1,610	666	1,359
Saharanpūr	.....	Irrigated since Settlement.	94,275	111	.....	49,393	.....	1,02,328	.....	446	923	.....	.....
Muzaffernugur	.....	Ditto	13,249	18	.....	7,936	.....	21,133	.....	442	1,174	.....	.....
Meerut	.....	Ditto	78,062	92	221	49,799	107,958	1,39,824	2,63,285	540	1,520	485	1,101
Saharanpūr	.....	Unirrigated	1,009,363	1,192	.....	4,14,564	.....	8,77,941	.....	348	737	.....	.....
Muzaffernugur	.....	Ditto	879,393	1,098	.....	4,28,694	.....	9,25,896	.....	413	892	.....	.....
Meerut	.....	Ditto	458,896	541	2,771	2,45,047	10,88,305	6,35,893	24,39,730	432	1,175	371	772
Grand Totals			27,69,536	.....	3,268	.....	13,79,624	.....	30,50,312	4,641	10,224	42,216	933-6-24

The proportions of irrigated to unirrigated areas in the districts of the Meerut Division, as deduced from this table, are as follow :—

	Unirrigated acres.	Irrigated acres.
In Saharunpūr, as .....	1,180,139	to 171,077 or as 1 to 0.14
Muzuffernuggur, as .....	980,209	to 100,816 or as 1 to 0.11
Meerut, as.....	598,878	to 149,982 or as 1 to 0.25

Thus Saharunpūr and Muzuffernuggur are irrigated to the extent of one-tenth, and Meerut to one-fourth, of their total areas, as given in the table. This proportion will be much increased when the Grand Ganges Canal is completed, as the irrigation of the eastern portions of these districts will then be provided for.

The proportions of the total areas of the irrigating villages actually watered are as below :—

	Irrigated acres.	Actually watered acres.
In Saharunpūr, as .....	171,077	to 32,780, or as 1 to 0.2
Muzuffernuggur, as .....	100,816	to 25,950, or as 1 to 0.25
Meerut, as.....	149,982	to 47,975, or as 1 to 0.32

The villages of these three districts therefore actually water annually nearly one-fifth, one-fourth, and one-third, of their total areas respectively. As a general rule the cultivators in the irrigated portion of the Saharunpūr district are decidedly inferior to those in Muzuffernuggur, and these again to those in Meerut—the western portion of which latter zillah is scarcely less thoroughly irrigated than the best tracts west of the Jumna.

Very nearly one-half of the area, now irrigated from the Eastern Jumna canal, has come under its influence since the settlement of the land revenue; and the effect of canal irrigation in increasing the income of Government is therefore very clearly proved. While the tracts of country, in which irrigation has longest prevailed, yield to Government an average revenue of 1,259 rupees, those, to which it has been more recently introduced, give 1,191 rupees, and the unirrigated lands only 772 rupees, per square mile

We give also for the Eastern Jumna the same calculation of the total increase of the land revenue as we before gave for the Western Jumna Canals :—

12.—*Statement of Canal increase of land revenue due to the Eastern Jumna Canal.*

Saharunpūr	....91 square miles at	957-	737=	Rs. 220 per square mile =	20,020
	111	"	922-	737=	= 20,535
Muzuffernuggur	101	"	1,237-	809=	= 34,815
	18	"	1,174-	802=	= 5,076
Meerut	.....84	"	1,610-	1,175=	= 40,640
	92	"	5,520-	1,175=	= 81,740

Total annual increase due to the canal ..... 1,52,756

If to this sum the annual direct revenue of the canal is added, we have the total returns equal to very nearly £27,500 per annum. The expenditure has been £81,460; and, supposing the current expenses to be £8,000, it appears that Government receives a net annual income of £19,500 on a capital of £81,460, or nearly 24 per cent.

There is the same marked difference in the returns of the two Jumna canals, as measured by their influence on the land revenue, which we formerly found in their direct incomes. While the quantity of water absorbed by them respectively, is as 4 to 1, the increase of land revenue is only as 2 to 1. Were the discharge of the Western Jumna Canal to be made efficient in the same degree as that of its sister work, the Eastern, the increase of land revenue, instead of being as now Rs. 2,96,400, would rise to Rs. 6,46,490, being an increase on this account alone of 3,50,090 rupees; to which if we add the increase in direct canal revenue formerly calculated, it will be seen that Government has the prospect of an enhancement of the income of the canal, to the extent of upwards of 5,23,000 rupees, or about £52,000 per annum. Surely if this anticipation is to be realised to even half its extent, no expense, necessary for the purpose of economising the supply of the Western Jumna Canals ought to be spared.

Of the total land revenue of the three districts traversed by the Eastern Jumna canal, about one-fifth, or Rs. 6,10,581 out of Rupees 30,50,311, is secured by it from risk of loss.

About one-fourth of the total population, or 291,319 out of 1,379,624 souls, occupy the canal villages; and the excess of rates per square mile in irrigated over unirrigated areas, is as marked east, as it was found to be west, of the Jumna. The proportions are as below :—

	Irrigated per Square mile.	Unirrigated per Square mile.
Saharunpūr, as .....	604 to 318	or as 1 to 0.57
Muzaffernuggur, as.....	510 to 413	or as 1 to 0.8
Meerut, as .....	544 to 452	or as 1 to 0.8

Saharunpūr is exaggerated in consequence of the population of the city of that name, the lands of which are irrigated, being included in the return; but the general result appears to be that the irrigated villages support a population about one-fifth greater than those which are unirrigated.

A startling result of the statistical enquiries east of the Jumna is said to have been the discovery, from the detailed returns of population, of the continued prevalence to a formidable extent of the crime of infanticide among the different tribes of Goojurs. We have not had it in our power to examine these returns, but the subject has been repeatedly mentioned to

us on both European and native authority. Many villages are said to have been found with scarcely a female child in them, while the proportion of boys was as usual; and this striking anomaly was found only among tribes of imperfect Rajpút descent, Mahommedan and other villages exhibiting the ordinary proportions between the sexes. The crime appears to have eluded the vigilance of the local European police authorities, who were ignorant of its existence, until the population returns brought it to light. Our object in alluding to the matter is not however to find fault with the police, but to suggest to those who have the power of making it, a comparison between the returns from irrigated and unirrigated Goojur villages, with the view of discovering whether the greater increase of material comforts, and the larger amount of wealth possessed by the former, have had any effect in checking infanticide among them. Some of the finest and most prosperous villages on the Eastern Jumna canal are in possession of Goojurs, who, from having been robbers and reivers, the true congeners of the old border cattle lifters of Liddisdale and Teviot, have now become steady, settled agriculturists, scarcely inferior to the modern representatives of their ancient brethren in the West. If female infanticide is to be traced to the heavy expences attendant on the marriage of daughters, it seems not unreasonable to infer that, where increased means of meeting such expences have been obtained, the powerful law of love of offspring should have again asserted its sway. And if our inference is supported by the facts of the case, a reason for the extension of canals of irrigation, appealing with irresistible might to every man of humanity, will have been elicited. We know the inveterate obstinacy of the prejudices of tribe,—we see how in the present instance they have evaded for years the keen eye of the law; but the removal of their first cause may have proved more effectual in destroying them, than all the repressive power of the Government or its local agents would have been.

We have now but to notice, and that very briefly, the small canals or water-courses in the valley of Deyrah, as being the only other completed works at present in existence.

These are small but most interesting canals, by which a portion of the great natural facilities for irrigation possessed by the beautiful valley of Deyrah has been taken advantage of.

The Bijapúr watercourse, finished in 1841, is derived from the Tonse, a drainage line of one of the valleys of the great Himalayan range, and irrigates a triangular tract of country about 7,500 acres in extent, to the westward of the town of Deyrah, and bounded by the Bindal, Tonse, and Asun

rivers. The channel, after leaving the Tonse, is carried boldly along the faces of the cliffs forming the sides of the ravine in which the river flows; and, sometimes by cutting through the rocks, sometimes by raising foundations from the bottom of the ravine, by tunnels in some places, by aqueducts in others, it is brought through most difficult ground to the high land at Dhakra, whence it proceeds to Gurki, and is there divided into two branches, one to the eastward, the other to the westward. For the first mile and a half the channel is of masonry, five feet wide, and three feet deep, and the remaining distance of eight or nine miles is an earthen excavation. The supply of water is about twenty-four cubic feet per second; the original cost of the works was Rs. 15,926-14-7; and the present net income is about Rs. 2,000 per annum, or about twelve percent.

The slope of the country over which the water-course passes is enormous, and is regulated by ninety-six masonry falls, varying from  $2\frac{1}{4}$  to 8 feet in height. Mills are established at favourable points, and return considerable profits to Government. The zemindars have not yet availed themselves, to the full extent, of the irrigating capabilities of the water-course, the country being but thinly populated and the necessity for irrigation variable.

The works were designed by Colonel Cautley, and executed, with much credit to himself, both as regards efficiency and economy, by Captain Henry Kirke, 12th Regiment N. I.

The Rajpúr watercourse, designed and executed by the same officers, is intended chiefly to supply the town of Deyrah with good drinking water, although it has a branch for irrigation extending from the cantonments over the high land by the village of Dhurrumpúr, and irrigating a triangular tract of land to the eastward of the town of Deyrah, bounded by the Bindal, Ruspunnah, and Súsua Rivers.

The masonry channel extends from the Ruspunna, some distance above the town of Rajpúr, to the large tank attached to the Sikh temple in the town of Deyrah, a distance of about seven or eight miles. North of the cantonment of Deyrah, before the irrigation branch leaves the main line, it is 4 feet wide, 18 inches deep, with a slope of 18 inches in every 160 feet, and a discharge of nearly 18 cubic feet per second.

Ten corn mills have been constructed near Rajpúr, and a circular saw mill at the village of Dhurrumpúr. The latter has however proved as yet a total failure, from causes which we do not very clearly understand, but chiefly, we believe, from imperfections in the machinery, which local resources do not appear to be adequate to vanquish.

The channel through the cantonment and town of Deyrah is 2 feet wide and 18 inches deep, opening at short intervals into tanks and reservoirs for the convenience of the inhabitants. The excessive slope gives every facility for the construction of fountains; so that, under the guidance of a local officer of taste, tact and energy, the town of Deyrah might be made one of the most beautiful and most cleanly in India. We cannot say that its present appearance is worthy of its magnificent situation, and almost unlimited capabilities; its beauties are nearly all due to nature, and very few to art. Colonel Cautley gives, in his Report, a design for a large octagonal bazar of characteristic architectural style, and ornamented by central fountains, which, if carried into effect, would have been worthy of the place; but nothing has yet been done towards the execution of the plan, although the people themselves give numerous evidences of a spirit of improvement, which requires only to be properly directed and systematised, to produce all the result desired.

The total cost of the works on the Rappur water course was Rs. 42,984-11-9: the net annual returns are about Rs. 3000.

These miniature canals in the Dhoon afford an excellent field for hydraulic experiments, and, in the hands of an officer, whose mind had been directed to such questions, might be made to furnish data of an invaluable character. The manageable supply, the long lines of masonry channel, the varieties of slope and head waters, furnish facilities for investigation which are not elsewhere to be met with; and, although these have not yet been taken advantage of, they probably will be, in course of time.

We have now completed our account of existing Canals of Irrigation in the provinces subject to the Government of Agra. We find that since these works first occupied the attention of the British authorities, they have expended upon them a sum of nearly £557,000, and have drawn from them in direct canal revenue nearly £546,000. They have brought under the influence of irrigation, and secured in a condition of the highest productiveness, an area of nearly 1,800,000 acres, yielding produce to the annual value of not less than 2½ millions sterling, and supporting a population of 600,000 souls, of which a considerable proportion has been reclaimed from habits subversive of all good government, destructive to themselves, and mischievous to their neighbours. Great tracts of land, formerly waste, now sustain a dense, industrious, and thriving peasantry, well supplied with every material comfort they desire, placed beyond the reach of the vicissitudes of the seasons, bearing with ease to themselves a proportion of the state burdens considerably in excess of that imposed upon their less

favoured fellow-subjects, and so sensible of the advantages they enjoy, that, even in the very worst of those localities, where inconvenience has arisen from the imperfections of the canal works, the general superiority of their circumstances is willingly admitted, and the desire for canal irrigation unhesitatingly expressed. So long as the control of the canals is vested in the local Government, the progress of improvement will be encouraged to its utmost extent; and we doubt not but that as each year passes by, the admitted evils will gradually become less and less in number and extent, until, under the skilful employment of liberal expenditure, they shall have entirely disappeared.

Before quitting the subject of existing canals, we desire to say a few words on the important question of the assessment systems now in use—a question important not merely on account of present, but far more so of prospective, canal interest.

We have already mentioned that two systems of assessment are at present employed: 1st, the measurement system, which entails the actual measurement of the crops after each harvest, according to which discriminating rates of water rent are levied. This system is employed exclusively on the Eastern Jumna and Dhún canals, and partially on the canals west of the Jumna, to the extent of nearly one-third of the land irrigated. The objections to this arrangement are palpable: its tendency is to impede, instead of to promote, the extension of irrigation, to deteriorate, rather than improve, agricultural operations, to introduce an incessant, minute, and harrassing, interference of the Government establishments with the cultivators, and to make irrigation rather a species of gambling, than a steady uniform part of the zemindar's measures. Every cloud in the sky is watched, every symptom of rain checks irrigation; and, in the hope of being able to dispense altogether with canal water, cultivators will occasionally allow their crops to be seriously injured by the delay. There is but one argument in favour of the system, which is, that if a canal is incessantly altering its levels, as the Eastern Jumna canal has hitherto been doing, or if the supply of water is exceedingly uncertain, as is the case in those parts of the Western Jumna canal, where measurement continues to be employed, no permanent settlement could be effected, the terms of which could be maintained. We believe that, west of the Jumna, justice requires that the partial use of measurement should be continued, as great limitations being made to it is possible. East of the Jumna, the time has, we think, arrived, or is near at hand, when the measurement system may, with justice to the state and the community, be entirely remodelled.

The second system is the permanent settlement by contracts

for 20 years, by which about two-thirds of the Western Jumna Canal irrigation is secured. In adjusting this contract system it is admitted that very little aid was sought from science: the average revenue paid by the various villages for the three years previous to the time of settlement, checked by reference to maximum years, was assumed for the permanent annual demand of the Government; and it was found that, in the formation of contracts with villages for which such data did not exist, a rate, per square inch of area of outlet, of from Rs. 2 to Rs. 2-8, was a fair approximation to the value of the water; the Superintendent however had large discretionary powers in the matter.

It is evident that this contract system is a marked advance upon the method by measurement, some of the most objectionable features of which are obviated by it. But it is still imperfect. It is founded on no certain basis, and involves the necessity of first determining by measurement what the irrigating capabilities of villages are, before data for permanent settlements can be procured. It could not therefore be employed in any new field with any degree of confidence; and, although there is good reason to believe that it has worked well in its own sphere, it cannot be carried beyond that. But the real importance of the question of assessment arises from the vast scale on which it will be necessary in a few years to entertain it in an entirely new sphere, when the Grand Ganges Canal shall be opened for irrigation; and for this it is absolutely essential that we should make early preparations.

We have thought much and often on what these preparations should be, and we give our conclusions, more in the hope that they may prove suggestive, than in the belief that they meet adequately all the difficulties of the case.

The settlement of so large a portion of the Western Jumna Canals does not admit of their being employed as so direct a field of improvement. But the Eastern Jumna Canal is untrammelled; its system of irrigation by *Rajbhas* is the same as that designed for the Ganges canal; its levels may now be considered as practically fixed; and we see no reason why its system of assessment should not be made the model for that of the Ganges canal, as its works have been the models for those of that great undertaking. Our subsequent remarks will therefore apply exclusively to the Eastern Jumna Canal.

The desiderata in a satisfactory system of assessment are, that, while it secures to Government the rapid realization of the just value of the water, it should adopt itself freely to all the necessities of the cultivation; should contain within itself the principle of free expansion to the full extent of the capabilities of

the canal; should provide against wastage, while it encouraged economy; and should leave the Zemindars as free as possible from all interference in the use of the water, after they had once paid the value which Government had put upon it.

The problems that arise are therefore to establish the just value of the water, and to determine the best method of issuing it. And here, at the very threshold of the subject, we are met by the unquestionable fact, that, in the present state of our information, we possess no means whatever of settling either of these points in any other way than that of the rudest approximation. Our enquiries must therefore begin at the very beginning, and to conduct these with success we believe that no other measure will be really effective than the appointment of a canal settlement officer, who may be able to give his undivided attention to the subject. Most willing, as we know the present Superintendent of the Canal to be, to undertake this or any other duty required of him, we believe that no man can efficiently settle the present question, whose mind is distracted by the unceasing demands a large executive charge involves. To suppose that the problem is an easy one—that the data for its solution may be collected in a haphazard way—that it may be taken up or laid down as other engagements permit, is mere ignorance. It is a question on which the undivided energies of an active and competent mind must be concentrated, and the amount of labour involved is neither small in kind nor extent.

The first duty of the settlement officer would be to cover the country under the influence of the canal with a net work of sections, parallel, and at right angles, to the canal. It would require no great amount of ingenuity to devise such a method of protracting the results of these sections, and of connecting them with the levels of the canal itself, that, by a glance at the map, the *irrigability* of any required locality might at once be ascertained.

The next step would be to determine, by careful, detailed, and varied experiments in different localities, the actual quantity of water required to give full and efficient irrigation to the various crops grown in canal villages. This quantity of water must be ascertained by measurement under circumstances as they actually exist, not by the use of formulas calculated from inapplicable data. Simultaneously with the above, equally careful and detailed experiments must be made on the actual discharges of principal and subordinate water-courses, under varying circumstances of opening of outlet, depth of head water, difference of slope, and such other points as may be found to exist. We do not advocate any extreme accuracy in these investigations; we are well

aware of the difficulties they will present ; but at the same time we feel certain that results of the utmost practical value may be obtained from them ; and in short, until they are made, we do not see how any system of assessment really efficient can be devised.

With data of this practical character, regarding the quantity of water required for irrigating given areas of land, and the dimensions of outlet necessary for given discharges, we are prepared to establish a fixed standard, by which the distribution of the water to the cultivators may be regulated.

The standard of the Italian system of assessment is the "Oncia," or Milanese inch, which corresponds with the quantity of water passing through an aperture 6 inches high, 8 inches wide, and open 2 inches below the surface of the water, giving a discharge according to the ordinary formula of nearly  $1\frac{1}{4}$  cubic feet per second.\* The discharge is supposed to be regulated by a machine, called a "Modulo;" but we have no reason to believe that the regulation is very rigidly exact.

What the Indian standard should be, is a point requiring careful investigation. It must be adapted to the circumstances and necessities of the cultivators : and we do not find the existing information regarding these sufficiently exact to warrant us in expressing any decided opinion on the question. We may say however, in general terms, that we should be disposed to recommend the adoption of such an area of outlet, as would give a quantity of water sufficient for the irrigation of a certain minimum extent of land. This minimum can only be determined after careful enquiry as to the actual wants of the zemindars. When so determined, some simple vernacular name should be attached to it, corresponding to the "Oncia" of the Italians ; and all irrigation outlets should be made to consist of a certain number of these standard inches, or whatever they may be called. The reasons for making a minimum standard are so evident that we need not dwell upon them.

The question of the regulation of discharge next presents itself. To attempt to regulate all village water-courses, numbering (as these do) several thousands, we regard as impracticable, and, even if practicable, most unadvisable—in as much as it would place an enormous degree of power in the hands of a corrupt, because under-paid, establishment, and would lead to much harassing interference with the agricultural community. We are therefore of opinion that regulation should be restricted to the central points furnished by the heads of Rajbuhās, or princi-

\* The Oncia varies somewhat in different localities. The above is the most general, and best known.

pal channels ; and that, for village water-courses, it should be sufficient to make masonry outlets, which would not admit of being tampered with, and the discharge from which would be practically fixed.

The details of regulation must occupy the attention of the settlement officer ; he must determine whether any, and what, form of measuring apparatus will be best ; the best positions, and the number, of such apparatus for each main channel ; and such other points as the course of the investigation may suggest. There are no difficulties, connected with any of these points, which may not be overcome ; and much of the success of the system will depend on the arrangements made for the distribution and regulation of the supply. It would occupy too much space and time to give, in this place the details which present themselves to us on the present branch of the question ; and we must content ourselves by stating, that to give efficiency to the arrangements, which the settlement officer may find it best to adopt, a native establishment will be required of higher qualifications and purer morality, than any at present available. We may look to the College of Civil Engineering at Rurkhi to furnish the men, and to Government to grant them suitable remuneration.

Finally, it will remain to determine the just value of the water issued under the new system. This is a question of some difficulty, and involves several considerations. The rate must not be too high, lest the use of canal water should be found unprofitable ; neither must it be too low, since there would then be no check upon wastage, and no motive for economy in the consumption of the supply.

The same quantity of water is not equally valuable under all circumstances, and it would be necessary to devise some scale of ready application to the different cases that occur in practice. It would be part of the settlement officer's duty to collect information on this point ; to compare the expenses of canal, with those of other kinds of, irrigation ; and, with the light which experience of the measurement system affords, to determine a rate, or rates, by which the fair claims of the state may be made compatible with the interests of the people.

We have dwelt too long we fear on this assessment question ; but it is THE question of the present stage of canal progress, and this must be our excuse. Its satisfactory adjustment will be as important to the canal department, as the land settlement was to the general revenue of the country ; and as this latter measure has, by its admirable elucidation of all rights in land, raised the value of property in a remarkable degree, so, we believe, is the

former measure, by its establishment in equal detail of all rights of water, calculated to produce results of corresponding importance. It would have been out of place to have entered upon minute details here ; but our suggestions as to the general features of the plan, imperfect although they are, may perhaps be found useful. We have invariably objected to the crude and immature projects, which from time to time have been advanced by zealous, but imperfectly informed, advocates of improvement ; and we shall therefore rejoice all the more to see the measures necessary for setting this question on a comprehensive and satisfactory basis, in active progress at the earliest possible period.

In passing now to the consideration of projected canals, we find these naturally subdivide themselves into two classes. 1st, canals projected, and in progress of execution ; and 2nd, canals projected, but not yet commenced. It will be most convenient to dispose of the latter class first.

The most important projected canals are those designed for the irrigation of the country between the Jumna and Sutlej, and drawing their supplies of water, either directly, or indirectly, from these rivers, or rendering available the minor streams by which the tract is traversed. Details of these various projects are given in the reports on canals in the Delhi territory by Major Baker of the Engineers, Captain Brown of the Revenue Survey, and other officers of whose labours these gentlemen have availed themselves.

The first in order is a project for rendering available for the irrigation of a part of the districts of Hissar and Bhuttiana, the waters of the Cuggur\* river, the most important of the Sub-Himalayan drainage lines. This river, rising in the Pinjúr valley, traverses in a south-westerly direction the protected Sikh states, the British territories in Hissar and Bhuttiana, the Bikanír state, and may be traced to the Sutlej in the Bhawulpúr country. During the cold season, its supply is very small ; so small indeed as to be of but little value in the upper part of its course, and of none in our own territories, the whole of the water being absorbed before it reaches there. It is upon the rain-floods that the irrigation of the adjoining country depends ; and it is to regulate these, and to facilitate their progress through our own districts, that the project under description is directed.

The Cuggur river, like nearly all other Sub-Himalayan drainage lines, may be described generally as a stream flowing in a defined and very tortuous bed through a wide valley, vary-

\* Otherwise Ghuggur.

ing in breadth from half a mile to three, or even four miles. The transverse section of the defined bed is of course exceedingly variable ; but it is generally from about 100 to 150 feet in width, and from 6 to 14 feet deep, in the part comprehended by the present project. The whole of the valley is usually submerged, or means are taken to cause it to be so, during the rainy season ; and, from the effects of the saturation thus produced, the land bears a good cold weather crop.

The Cuggur leaves the protected Sikh states in the vicinity of the village of Phúlund. During its passage through these territories, its waters are rendered available for irrigation by means of " Bunds," or earthen embankments carried across the bed of the river. To this most injudicious and destructive system the gradual deterioration of the bed of the river is principally due. North of each embankment, the silt charged waters deposit annually new layers of sand, which in many places have already obliterated the defined bed, and caused the stream to spread over the valley, and to lose its power of forcing its way to the lower portions of its course. The wastage of water, so valuable in these arid tracts, is also frightful, from the total absence of all means of regulation, or control. With the increased facilities late events have afforded us, measures ought to be taken to regulate the consumption of the waters of the Cuggur before they enter the British districts, so as to secure for the inhabitants of these their just share of the stream.

South of Phúlund, the Cuggur throws off a branch, called the Choya, Chonya, or Cuggur nala ; and all officers, who have directed their attention to the question, agree in considering that this branch is in all respects more favourable for purposes of irrigation than the main stream.

Major Baker's project accordingly consists of two masonry dams, or regulators, connected by a revetement wall. One dam, of 78 feet waterway, crosses the bed of the main stream ; the second, of 52 feet, will regulate the discharge into the Choya. Means are provided for distributing the flood waters between the two channels, the first floods of the season being passed down the Cuggur so as to fill the various jhils, or depressions in its course, on the contents of which the people depend for water during the dry season.

The channel of the Choya is to be remodelled by straightening its tortuous course, and so increasing its effective fall.

The expense of these measures is estimated at no more than Rupees 34,265-4-10, while the return to Government, by merely insuring the land rent from the fluctuations caused by deficiency of the ordinary supply of water, exceeds *two-thirds* of the esti-

mated expense, being Rupees 24,330-15-4 ; while the increase of supply, insured by the new arrangements, would provide irrigation for an additional extent of land amounting to 18,097 acres, and furnishing, at the very moderate assessment of 8 annas per acre, a revenue of Rupees 39,048½ per annum.

Obstacles would appear to have arisen to the execution of this promising project ; the chief of which seems to have been the fact, that certain villages in the vicinity of the site of the dam at Phúlund, including this site itself, were claimed by, and would probably be granted to, the Rajah of Pattiala. Still there could have been no practical difficulty in securing the management of the dam, and indeed the general regulation of the whole course of the river in the hands of English officers ; and it can scarcely be doubted that the result would have been to improve greatly its capabilities.

A suggestion has been made to furnish to the Cuggur river a regular supply during the rainy months from the Delhi canal, from which the water can then, without difficulty, be spared. The scheme is practicable ; and the propriety of its execution is simply a question of comparison between the expense of the works, and the benefits to be derived from them. As yet no measures seem to have been taken to procure materials for such comparison ; but the plan is worthy of investigation, and should not be lost sight of.

The practicability of turning the waters of the Sutlej to use for purposes of irrigation early attracted the attention of our Mahommedan predecessors, and several traces of ancient canals from that river still exist. Such historical records as are available attribute most of them to the period of Feroze so fruitful in works of irrigation : but it must be confessed, that the allusions to his Sutlej canals are so indistinct, and in some cases so irreconcilable with the topographical features of the country, that it is almost impossible to make any thing satisfactory out of them. We need not therefore do more than allude to these old works ; and we now proceed to detail what has been done by the British Government.

To Major W. E. Baker of the Bengal Engineers belongs the merit of having first clearly and satisfactorily established the perfect practicability of a canal of irrigation from the Sutlej, and of having supplied such data as admit of a fair approximate estimate of the probable expense and returns from such a work being made.

Major Baker's project does not affect to be the best that could be framed. The brief period allowed for his survey made it impossible for him to examine the country in that degree of

detail, which is a necessary preliminary to the actual execution of a great canal. But he has proved in the clearest manner the following most important facts ; that an immense tract of British territory, now a desert, is admirably suited, both by the nature of its soil, and the profile of its surface, to take the fullest advantage of any means of irrigation that may be placed within its reach ; that the introduction into this tract of a stream of water from the Sutlej is physically practicable ; and that the probable benefit is so great, as to warrant Government in undertaking the work, when means are available.

The tract of country, whose improvement is contemplated by the Sutlej canal, consists of part of the district of Hissar, and nearly the whole of Bhuttiana, called commonly the "Hard Desert." It is a bleak, wretched, and (without water) most sterile land. The wells are so deep that artificial irrigation is impossible : the water is so brackish and impure, that none, save natives of the tract, can drink it with impunity ; rains are scanty, and precarious vegetation is represented by a few stunted thorn bushes, or a temporary crop of grass over the great parched plains. Under circumstances so ungenial, the population is necessarily scanty and lawless, deriving their subsistence chiefly from herds of cattle, and addicted to the marauding habits common to pastoral tribes.

The question here is, therefore, not to improve agriculture, but to create it ; not to provide, as in the Doab, for the casual occurrence of an unfavorable season, but to supply by the resources of science a substitute for that deficiency of rain, which is the rule, and not the exception ; and finally, to enable an extensive and capable province to become, by its increased resources, and the progressive improvement of its inhabitants, a source of strength and revenue to the state, instead of being, as now, a burthen and weakness.

These are noble aims, worthy of an enlightened and Christian Government, and we shall now briefly detail the measures by which it is proposed to attain them.

The river Sutlej, after flowing for between 300 and 400 miles within the Himalayan range, breaks through the low hills on the southern face of these mountains at the town of Roopur. For twelve or fourteen miles above this point, the stream flows through a valley, varying from 1 to 4 miles in width, bounded by low ranges of hills, consisting generally of unconsolidated strata of clay and sand, intermixed with kunkur. The discharge is estimated at 5,400 cubic feet per second ; the fall is about 4 feet per mile ; and the bed is generally sandy, with occasional layers of shingle.

On judicious and satisfactory grounds, the head of the proposed canal is fixed at a place called Búnga, 13 miles above Roopur.

At this point traces of an ancient canal, said to have been excavated by Mirza Kúndi, the Governor of Sirhind under Mahommed Shah (probably IV.), were found, and with occasional interruptions were observed as far to the southward as Sirhind.

To restore this old line, connecting it with the Sirhind Nala, whereby the stream would be carried in one main channel to Sungrúr, a total distance from the head of nearly 90 miles, appeared to Major Baker to be the most economical plan of delivering the water at a point from which it might be favourably distributed, by two branch canals, to northern Hissar, and the Bhutlí states.\* The Hissar branch would be forty miles, the Bhuttiana branch 100 miles in length.

The chief, indeed the only, difficulties occur in the first forty miles from the head. These are three in number. The 1st, is the want of permanence in the bed of the Sutlej, giving cause to anticipate some difficulty in maintaining the canal supply. This it is proposed to remedy by building a masonry dam across the bed of the stream, whereby considerable security against alteration would be obtained. The 2nd, is the deficiency of fall in the country from Búnga to Sirhind. This fall is only 40 feet in forty-one miles; and, as the depth of digging at the canal head is 6 feet, the effective fall available for the canal channel is only 34 feet in forty-one miles, or 9.9 inches, say 10 inches, per mile. This is a small slope certainly for an Indian canal; but it might be increased to 12 inches, by adopting planks, or gates, to the piers of the masonry dam, so as to obtain during the season of irrigation 5 or 6 feet of additional head water. With even the lower regimen of slope, however, we believe the canal would be found efficient; and we hold the difficulty to be of no great importance. The 3rd, is the very deep excavation, ranging in the first fifteen miles south of the Sissúwala Nala, from 32 to 20 feet. It is considered probable that farther examination might lead to a better line being found, south of Roopur—a very likely result; but, even if unattained, the deep digging is not without its advantages, inasmuch as it admits of the hill drainage being all passed *over* the canal instead of through it,

\* That the plan proposed by Major Baker would be the cheapest available may be true, but that it would be the best is, we think, open to question. Nothing is more certain than that the occupation of old lines, and the employment of existing river beds, have proved fruitful sources of evil on canals now in operation, and we believe that it would be true economy to avoid them. The levels are almost universally low, and the channels tortuous, both objections of serious importance in canals of irrigation; and we therefore trust the Sutlej canal, if ever undertaken, will be constructed independently of former lines, or nalas, even although this should entail some additional expense.

as is the case on the Jumna canals, where it is the source of so much evil and expense. On the whole therefore the difficulties of the project are not of serious consequence at their worst; and we doubt not but that the resources of the officers, who may be employed on the works, will prove adequate to vanquish them all.

The estimated expense of the Sutlej canal, with works on such a scale as to make it competent to a discharge of 2,500 cubic feet per second, is Rupees 25,00,000, or £250,000. This estimate is a liberal and sufficient one, and would probably be found to exceed considerably the actual cost.

The probable returns, so far as the Government is concerned, will consist of water rent, and such increase of land rent, as irrigated tracts under similar circumstances have been found to yield. As regards the first item, it is calculated that 2,000 cubic feet of water will reach the irrigating districts; and, assuming the low average rate of the Western Jumna canals as the standard, this discharge is competent to the irrigation of 312,000 acres. The average water rent, west of the Jumna, is exactly one rupee per acre; consequently the return to Government from this source would amount to Rupees 3,12,000 per annum.

To form an approximate estimate of the increase of land revenue which Government may anticipate, we avail ourselves of the statistical table of the Western Jumna canals formerly given; and we assume that the influence of these canals on the district of Hissar may be taken as a guide in forming an opinion as to the influence of the Sutlej canal on the same district, and the adjoining one of Bhuttiana.

From the table we accordingly find that, while the rate of land revenue per square mile of unirrigated localities in the district of Hissar is Rs. 156, that for irrigated tracts is Rs. 485, giving a difference in favour of the latter of Rs. 329 per square mile. Again, we find that the area on which the increased land rent is calculated, bears to the area actually watered the proportion of 2 to 1; hence, as the Sutlej canal actually waters 312,000 acres, the increased land revenue must be calculated on twice this area, or 624,000 acres, being 737 square miles. The increase of land revenue may therefore at once be shown as below: 737 square miles of irrigated land at Rs. 329 per square mile = Rs. 2,42,473.

The total direct pecuniary return to Government from both the preceding sources would accordingly be Rs. 5,54,473 per annum, on an invested capital of Rs. 25,00,000, or nearly 22 per cent.

We must ~~not~~ however restrict our views to the benefits Government will derive from the project. We must consider also the gain to the community, by bringing so large a surface of country, now a desert, under cultivation to the same extent as we find it on the Western Jumna canals. The benefit to the community will be represented by the gross value of the agricultural produce, which the Sutlej canal will admit of being obtained from land which now yields none. Taking the results on the Western Jumna canals again as our guides, we estimate the value of the produce alluded to as below :—

## KIHURIF CROPS

13,000 Acres of Sugar Cane,	at Rs 80	-- 10,40,000
52,000 „ of Cotton	at „ 48	- 24,96,000
52,000 „ of Rice, Jowar, &c.,	at „ 38-4	— 19,89,000
RUEE CROPS.		
195,000 „ of Wheat, Barley, &c.,	at Rs. 48	— 93,60,000
Total Gross value of Crops on Sutlej Canal...Rs. 1,48,85,000		

Time will, of course, be required to create this property of the value of nearly one and a half millions sterling per annum ; but it is only necessary to compare the state of the Hissar district, before the Western Jumna canals were restored, with its condition in its irrigating villages for the last ten years, to be satisfied that, with the supply of water, the first necessity of agriculture in North Western India, there will come a population able and willing to use it.

The benefits of the proposed canal now mentioned are such as admit of being approximately estimated in money ; but there are others which are measurable by no such standard. Among these are the moral benefits to be derived from introducing agricultural habits among a lawless and semi-barbarous people, converting them from wandering shepherds into settled, contented, and prosperous cultivators ; and the physical benefits to be anticipated from restoring fertility to a large tract of country, the increased moisture of which may probably so re-act, as to secure more constant and more abundant supplies of rain over the adjoining districts, and thus improve the condition of those who cannot directly benefit by the canal. The numerous traces of former rivers unconnected with any mountain ranges and the ruins of towns along their banks, show that these desert regions once enjoyed a far more generous supply of rain than they now do. We may hope again to re-establish this happier state of things, and thus to check that deluge of sand, which threatens to submerge so large a portion of their surface.

The Secretary to Government (N. W. P.) in the correspondence before us, justly characterises the Sutlej canal as "a splendid undertaking." When the time arrives at which Government can carry the project into effect, we trust it will be made even more "splendid," by such an extension of its dimensions, as will admit of its bringing into use the entire supply of the Sutlej at Roopur. The sole objection to this is, that for three or four months of the year, the navigation between Ferozpur and Ludiana would be impeded; but the extent of this navigation must be trifling indeed, in comparison with the advantage to the state and the community from doubling the effective discharge of the canal. Major Baker's estimate for the original project is so liberal, that we believe the proposed extension would be effected for about one-half more than the sum he mentions, while all returns would be doubled. We are therefore disposed to hope, that as the Grand Ganges canal will render memorable in these provinces the civil administration of Lord Auckland, so the Grand Sutlej canal may illustrate that of Lord Dalhousie.

A canal having its head of supply to the westward of Ludiana, near a place called New Tiharah, has also been projected, with the view of bringing into use the water of the Sutlej during the rains. This work has, however, on more careful examination of the country proved to be, although practicable, so little likely to be profitable in comparison with its cost, that it has for the present been abandoned; and we need therefore only mention it here.

Crossing the Jumna, to the eastward, the only projected works are measures to take advantage of the streams which, rising in or near the Siwalic range, traverse the districts of Saharunpur and Muzaffernuggur. It is very desirable to subject these streams to professional control, so that their waters may be rendered available for irrigation, without entailing the evils we have seen to prevail on the unregulated rivers west of the Jumna.

The extension of irrigation in the eastern portion of the valley of Deyrah, and the drainage of those great swamps which at present render this tract so fatal to human life, are also projected, but have not yet been undertaken. There is here a great and most interesting field for improvement, and, until the projected drainage arrangements are carried into effect, this portion of the Dhún must continue, as now, to be worse than useless to the State and community. The facilities for drainage in the vicinity of the great swamps are remarkable; there are numerous channels of escape connected with the Ganges, the rapid slopes of the beds of which would make them most efficient; and nothing more is required than to select the most convenient of

these, and to connect them with the swamps by drainage cuts of adequate dimensions, and properly adjusted levels. The work will not, it is true, advance very rapidly, as men can exist in these jungles only for three or four months of the year; but as each swamp is drained, the salubrity of the adjoining country may be expected to improve, and with each year of progress a larger period of time for active operations would be made available. It is now some years, we believe, since the Court of Directors expressed their wish that the preceding operations should be set in progress; but the want of qualified men to superintend them has apparently prevented their being undertaken. It is trifling with the question to call upon the local civil officer to devise plans for works which, simple although they are, require some professional knowledge and experience to secure their being designed efficiently, and executed economically. This duty properly devolves on the executive officer of the canal department in the Dhún; and to him we may look for the detailed plans required to carry into effect the general design already sketched out by Colonel Cantley in his "Memoranda on the Dhún water-courses."

It remains for us now to notice the third and last class of the canals of the British Government, those namely, which at this time are in course of execution.

Although it is in some degree transgressing the strict limits we had prescribed to ourselves, we shall first briefly describe the canals of the Punjab, now in progress under the superintendence of Major Napier of the Bengal Engineers, the Chief Engineer to the Lahore Government.\*

\* It will readily be discovered that the above account of canals in the Punjab was written prior to the Campaign of 1818-49, which has just terminated in the extinction of the dynasty of Runjit Sing, and the extension of the frontier of British India to the base of the Suliman mountains. Whatever differences of opinion may exist as to the conduct of the long series of operations which have thus closed, there are, we believe, very few who do not heartily rejoice in their consummation. Whatever power may be paramount in the country, our remarks on the means available for its agricultural improvement retain all their force. Under these impressions we leave them, although written as far back as April 1818, untouched.

It may be well however to note that the last paper on the list heading this article deals with the question of canals in the Punjab in greater detail than we attempted, and with advantages of personal knowledge of localities, which we did not possess.

Lieut. Baird Smith proposes to apply very neatly the whole available waters of the Punjab to agricultural purposes. This supply, amounting, according to the best data procurable, to about 12,000 cubic feet per second, would furnish sufficient irrigation for a tract of country, containing upwards of 8 millions of acres. The method of distributing the waters proposed is to carry a main line of canal through each of the three Doabs included in the project, the Bari, Richma, and Jetch. From these main lines branches would be carried to the right and left wherever required; and, as water is the only element of agricultural prosperity now wanting, there can be little doubt that the completion of the series of works suggested would render the Punjab one of the most profitable acquisitions ever made by the British Government. The utmost limit of the expenditure required has been fixed, on liberal

The extraordinary facilities for irrigation possessed by the land of the five rivers, in its abundant supply of water, its wide plains sloping gently from the base of the Himalayas, and the natural fertility of its irrigated soil, would lead us to anticipate the existence of canals, dating from the period of the Mahomedan empire. And so it is; for there are numerous traces of ancient canals, and old systems of irrigation, which had been in existence long previous to the time of Sikh superiority. Of these the most important, and indeed the only one, which has continued to flow perennially amidst all the distractions of that harassed land, is the "Shah Nahr," which, leaving the Ravi at its debouchement from the hills, brings water to Amritsir and Lahore, supplying the sacred tank of the one, and the Shalimar Garden at the other of these cities, and ultimately, after flowing for nearly 110 miles, returning to the Ravi near the latter.

The alignment of this canal is good, and crosses only two easily manageable mountain torrents, the Jena and the Chukhi. Its supply has hitherto, however, been only about 200 cubic feet per second, and has been liable to occasional diversion from purposes of irrigation, when water was in request at Amritsir and Lahore. Of this supply a large portion is wasted by neglect, the dishonesty of the native establishment, and other causes, so that the present revenue is little more than one-third of what a similar canal in the British Provinces would produce, although the rates of water rent are double of those which our Government levies.

The means available for the improvement of the Punjab canals are very limited, being only Rs. 1,38,000 per annum. But even with this sum, judiciously expended, much may be done.

The total discharge of the Ravi, when at its minimum in

estimates, at nearly Rs. 60,00,000 or £600,000; and it is calculated from official data that, when the proposed system had attained its full development, the land revenue of the three Doabs would amount to Rs. 3,40,00,000, or nearly 3½ millions sterling per annum. The land revenue of the Sind Sagur Doab, the Peshawur, Derajat, and Hazareh countries, not included in the project, with the miscellaneous revenues of the state, are supposed to add about half a million to the above estimate, making the total revenue of the Punjab about 4 millions annually. We cannot of course enter into the details of the calculations from which the preceding results are obtained; but they are carefully derived from official documents, and there seems to be no good reason for questioning their general correctness. We are certain that the subject is one which will receive early attention from the present Lahore Government; and we earnestly hope that the necessary measures will be undertaken in a liberal spirit, and with comprehensive views. Imperfectly executed canals of irrigation are of questionable benefit to a country; when efficiently constructed, and judiciously administered, their beneficial influence is well nigh without alloy.

January 1848, was found to be 2,718 cubic feet per second, the whole of which Major Napier's remodelled canal would ultimately bring into use for irrigation.

Now a canal having a discharge of 2,718 cubic feet per second is capable, according to the Eastern Jumna canal standard, of actually watering 500,112 acres each year, and of furnishing sufficient irrigation for a tract of country three times this area, or 1,500,000 acres in extent, being nearly 1,900 square miles. The influence on the prosperity of the Bari Doab, or the country between the Beas, the Sutlej, and the Ravi, by bringing so large a portion of its surface under the influence of irrigation, would be, as in all similar cases, great and immediate. The discharged soldiers of the Sikh army, now swarming in the poverty-stricken villages of this tract, would find in agricultural occupations a means of existence, and in the increased value of their property a source of interest in the stability of our rule. That in the villages, on the banks of the "Shah Nahr," Major Napier and the officers under his orders should not have found a single soldier, all having passed back into their original condition of agriculturists, is a fact so full of meaning, as to merit the careful consideration of those to whom the permanent settlement of the Punjab has been committed. We believe that, in the increase of wealth and all personal enjoyments, the improvement in the value of property, the security from all the ordinary contingencies to which agriculture is exposed, which invariably have followed the introduction of canals of irrigation, our Government would find its best guarantees for peace and quietness among a warlike people, who will always prefer the chances of a state of disturbance to the certainties of such a state of repose as now exists, in which they are mere excrescences on the body politic, without occupation, without resources, and without hope.

The remodelled "Shah Nahr," or Ravi canal, will consist of one main channel from the head to Dinanuggur. From this point a branch will strike off to the eastward for the irrigation of the Eastern Manjha country. The main canal, continuing its southern direction, will throw off another branch for the irrigation of the Western Manjha, while minor channels will supply the wants of the cities of Lahore and Amritsar.

The total length of the Ravi canal will be about 340 miles. To form an idea of its cost we may compare it with the Western Jumna canal, which has a nearly equal discharge. This canal, including all the masonry works executed upon it up to the present time, has cost 2,557 rupees per mile of its total length. The expense of the Ravi canal would therefore be Rupees

10,69,380 We have before mentioned that Rupees 1,38,000 are available for canal operations in the Punjab annually. It would consequently require upwards of eight years to complete this one canal, supposing the whole available sum were appropriated to it, which is more than could be expected. The prospect is therefore not a very cheerful one; but are there no means of facilitating the execution of a work, the importance of which to the prosperity of the country is undeniable? We believe there are, and that it would be to the interest of our Government to advance to the Lahore state, as a loan, the funds requisite for carrying on the canal. Leaving out of consideration the political motives for such a step, let us, in a few words, exhibit the pecuniary relations of the question.

We have seen that the Ravi canal will be competent to irrigate 500,000 acres, on which a water rent of Rs. 1 per acre—being the average rate of the Jumna canals, and only half of the present Punjab rate—would secure an annual revenue of Rs. 5,00,000: we leave out of present consideration the increase of land revenue, which might at the same time be anticipated.

The annual repairs and the expenses of establishment on the Western Jumna Canals amount to Rs. 310 per mile. Consequently the total annual expenses of the Ravi canal would be Rs. 1,05,400, and, supposing that Government claims five per cent. on the advances made, an additional annual expenditure of Rs. 53,469 would be incurred on this account. The case would therefore stand thus—

Total Estimated Annual Income,.....	5,00,000
Ditto    do.    do. Expenses,.....	1,58,869

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Net Annual Income available for repayment  
of advance, ..... 3,41,131

These results allow a wide margin for possible disappointment, yet we feel as sure as one can be on such a subject, that, within ten years from the commencement of the work, the debt would be cleared off, and the revenue secured intact to the Lahore Government, while the land would be improved, and the people made prosperous and contented. To the latter the work would be most acceptable, as they shewed by accompanying the Survey Officers in crowds, pointing out the ground to them, and expressing the utmost anxiety to be supplied with the means of bringing their lands under cultivation. More would be done to settle the Punjab by such works of internal improvement as the Ravi canal, than by ten thousand British bayonets.

Passing to the westward of the Ravi, or into the Richea

Doab, we find the "Shekúpúr canal," derived from an affluent of the river Chenab, and furnishing irrigation to a considerable tract of country during the rainy season. The original object of the canal appears, however, rather to have been to supply water for the imperial palace and hunting grounds at Shekúpúr, than for purposes of irrigation.

To make the waters of the Chenab available to a like extent, as is proposed in the case of the Ravi, will be an object worthy of attention, when funds are made available. By means of a Chenab canal, the Ríelma Doab might be converted into a garden, and its great jungles replaced by sheets of the most luxuriant cultivation.

The Jhelum does not appear to have ever furnished any means of irrigation; although in the hands of English officers we doubt not that it would contribute its quota to the general improvement of the Punjab.

From the Indus, above Dhera Ghazí Khan, a considerable canal has been drawn. It is reported to be about 21 miles in length, 30 feet in breadth, and 8 feet in depth. It is however employed at present only when the river is swollen by the melting of the snow on the hills, or by rains; but a perennial stream could doubtless be established.

There are many canals in the Múltan country, to which much attention was paid by Dewan Sawun Mull and his son

Along the whole of the country at the base of the hills, from the Beas to Peshawur, irrigation is practised by means of cuts from the numerous small streams which are met with there.

We have said sufficient to give an idea of the capabilities of the Punjab—a territory neither prosperous, nor profitable, at this present time, but possessing within itself the latent elements of a state of the highest agricultural prosperity, which require only to be developed by the efforts of energetic men, furnished with adequate means. From twenty to thirty lakhs of rupees would suffice for the construction of a canal in each of the Doabs; and no state could take upon itself a debt to this amount with greater certainty of repaying it, or of reaping advantage from it more than sufficient to warrant its having been incurred.

Returning now to our own provinces, the first works that claim notice are those for the drainage of the Nujufghur Jhíl, and the irrigation of the lands now covered by this great sheet of water.

The Nujufghur Jhíl, or Lake, extends from near the city of Delhi to some distance beyond Dholkote, and may be described as consisting of a main trunk, of extremely irregular outline, and

having a general southwesterly direction, about 24 miles in length, and from a quarter of a mile to three miles in breadth; and of two branches thrown off from the western border, the most northerly of which is about seven and a half, the other about fourteen miles, in length, each being about half a mile in width.

The southern extremity of the main trunk expands into a large basin about 3 miles in diameter, into which the rivers supplying the jhíl discharge themselves. These rivers are two in number, the Badshahpúr Nala, which receives the drainage of the hilly country southeast of the basin, and the Sahibí Nala, which drains from the westward.

Professional attention appears to have been first turned to the improvement of the Nujufghur Jhíl about 1838, when Captain H. M. Durand of the Engineers was appointed to survey the ground, and to report upon the subject.

The project submitted in May 1838 by this able officer was simple in design, and efficient in detail. It contemplated the regulation of the floods of the Badshahpúr Nala by means of a properly situated dam; the entire division of the waters of the Sahibí Nala from the jhíl basin, except in years of extraordinary floods, and the excavation, through the high land at the north-eastern, or Delhi, extremity of the jhíl, of an escape cut to the river Jumna, of such dimensions, and such level at the head, as would admit of its draining the whole surface of the jhíl. This cut was of peculiar form, having a wide and shallow section in its upper portion to admit of the rain-floods passing off easily, and a narrow and deep one below to secure the ultimate drainage of the most depressed portions of the jhíl bed. The project contemplated also the construction, across this drainage cut, at a favourable point, of a regulating bridge, by adjusting the gates or sluices of which such quantity of water, as was necessary for cultivation, might be retained in the jhíl, and gradually discharged, as the zemindars were prepared to cultivate the land laid dry.

This system was in exact accordance with the practice of the people in the jhíl villages from time immemorial. Long experience had taught them the usual levels of the jhíl waters; on the ground just beyond the limit of continued submersion they planted sugar-cane, which ordinarily was luxuriant. As the waters of the jhíl dried up at the termination of the rains, the submerged ground was ploughed, and wheat was sown, and in this manner the cultivation followed the retiring waters, until the whole land usually laid dry was covered with crops.

In case of a failure of the rains, and to maintain the supply in the jhíl to the full extent required, Captain Durand proposed

to carry a cut from the Delhi branch of the Western Jumna canal, and to depend upon it in cases of emergency.

Had this project been carried out, as originally designed, its success would have been certain; but unfortunately, when it was submitted to the Military Board, that body so altered it, that it proved a total failure: and, during the preceding four or five years, the last state of the unlucky zemindars has been worse than the first, as while their land rent had been enhanced to the extent of upwards of Rs. 10,000, their crops perished from want of water at one time, and from too much at another.

The expense incurred in the execution of such portions of Captain Durand's project, as were authorized, appears to have been about Rs. 58,000; and, as Government had made these works the grounds for enhancing the land revenue, common justice required that efforts to render them efficient should be continued.

A new project was accordingly prepared in 1847 by Mr. Battie, the executive officer of the works, which, after being approved of by Major Baker and Colonel Cantley, was immediately commenced, and is now in progress.

According to this project, an embanked channel, 40 feet in width, will be carried along the lowest levels of the jhíl from the Delhi extremity to the gorge of the Dholkote basin. On reaching this point, the embankments turn to the right and left to meet the high land bordering the basin, which is thus entirely isolated from the main trunk of the jhíl; and the waters entering it have no other means of escape than through the embanked channel. From the main channel two subordinate lines are carried along the lowest levels of the Bahadúrghur and Bussunnia branches of the jhíl; and means are adopted for collecting the country drainage water into these different channels by means of duly adjusted catch drains. At the Delhi, or northern, end of the main channel, the regulating bridge is placed, by which the water can be maintained at any desired height, the surplus being passed off by an escape cut to the river Jumna.

This project, it will be observed, differs from Captain Durand's in contemplating the entire recovery of the land forming the bed of the jhíl and its branches, with the exception the space occupied by the embanked channel; and in substituting for the submersion of the land for a certain time, irrigation in the ordinary manner from a canal supplied by a large reservoir.

The contents of the Dholkote basin are calculated to be sufficient for the irrigation of 24,000 acres; and the quantity of land to be permanently redeemed is estimated at 12,800; so that

there will be but little risk of want of water except in extraordinary seasons, for which provision may be made by a cut from the Western Jumna canal.

There is every prospect of Mr. Battie's design being a successful one; and, should it be so, it will secure to Government an annual revenue of about Rs. 17,000. The estimated cost of the new works being Rs. 60,000, and the total expenditure from first to last Rs. 1,18,000—supposing the cost of repairs and establishment to amount to Rs. 6,000 per annum, the Nujafghur jhíl works will return to Government about 9 per cent. on the capital invested in them.

There are several other large jhíls in the Delhi territory, which have been to a certain extent made available for cultivation, as the Chundaure, Kotillah, &c.; but these need not now detain us, as they are of no special importance. It is however most interesting to trace the extraordinary extent to which irrigation has in former times been carried on in this part of the country. Incredible numbers of ancient bunds exist, and, wherever there was a possibility of collecting even the smallest body of water, there an embankment seems to have been formed, and a plot of ground of proportionate extent brought into cultivation. The immediate vicinity of the imperial city, with its court and army, probably gave an excessive stimulus to local agriculture, and led to these numerous works being constructed.

Continuing now our progress to the eastward, the next work we find in course of execution is the Kutta Puthur canal, intended for the irrigation of the western portion of the valley of Deyrah.

This work was originally designed by Colonel Cautley in 1811, and was then laid aside on account of the financial pressure of the times. In 1847 the practicability of the work came again under discussion, and Lieutenant Baird Smith was directed to superintend a new survey and design of the proposed work. The services of 2d Lieutenant Hutchinson of the Engineers were made available for the field work, and the new design, differing from that of Colonel Cautley only in details, is thus summarily described by Lieutenant Baird Smith.

“The Kutta Puthur canal, leaving the Jumna at a point on the left bank of that river, immediately under the village whence the canal derives its name, is 10 miles and 3,712 feet in length. Its fixed supply of water is 80 cubic feet per second, and its fall from the head to the bed of the Sitwala river, in which it terminates, is 52.59 feet, whereof 19.59 feet are absorbed by the initial digging and the slope of the channel, and 33 feet disposed of by masonry falls of 10, 5, 12, and 6, feet in depth

respectively. In its course it traverses 19 mountain streams, being drainage lines from the southern slope of the Himalayas. These streams are annuals, being full only during the rainy season, and the canal crosses them by seven dams with waterways varying, as detailed in Lieut Hutchinson's report, from 10 to 100 feet, and 12 aqueducts varying similarly from 10 to 90 feet. Its masonry channel, 10 feet in width, and 3 feet in depth, extends for 19,713 feet (or nearly 4 miles) from the head, the remainder of the course being in earthen embankments, or excavations, as necessary. Three bridges for cross communication, two mill houses for double sets of stones each, one first class and three second class chokies, are provided for; and it is supposed that the whole series of works will be finished, and the canal opened, at the end of the year 1849. The estimated expense is Rs. 88,902-11-1."

This canal has the same general characteristics as the other Dhún canals formerly described. It is carried along the faces of the cliffs rising over the Jumna, in a masonry channel, until it debouches, on the up-land of the western Dhún, at a place called Ambarí, from whence it is carried to the eastward, in a direction generally parallel to the main range of the Himalayas, and as near to its base as the levels permit, so as to bring the largest possible extent of land to the southward under irrigation. About 17,000 acres of the richest soil will ultimately be brought under the influence of the Kutta Puthur canal. This beautiful tract of country is now almost a waste; a few miserable looking villages are scattered throughout it, but the population and cultivation are alike checked by the want of water for the common purposes of life. There is no adequate supply of drinking water for man or beast, and, until this first necessity is supplied, any hope of improvement is of course vain. With it, and an abundant additional supply for irrigation, this part of the Dhún ought to be one of the richest in India. It is not improbable that, in the course of a few years, it may become our great Tea plantation, the locality having been pronounced peculiarly adapted for the cultivation of the Tea plant. If so, we hope Government will not itself absorb all the ground, but rather give a fair field to individual enterprise and capital, by dividing it into grants of a moderate and manageable area, for which grantees would doubtless be found in abundance.

The return to Government on the Kutta Puthur canal from water rent alone is estimated at about 8 per cent. on the capital invested. What the increased land revenue would be it is difficult to say. At present this revenue is nominal; and whatever the amount of future assessment may be, it will be due entirely to the canal.

The waters of the Jumna have proved inadequate, during certain seasons, to supply fully the demands of the existing canals, east and west of that river. It may seem therefore a somewhat rash undertaking to establish a new drain upon them for the Kutta Puthur canal. But, in point of fact, the seasons of great scarcity of water are rare; and a system of expansion-reservoirs attached to the new canal will be sufficient to meet this contingency, which is always of limited duration, extending from about the middle of December to the middle of March. We do not therefore think that any practical difficulty will be experienced in arranging this matter satisfactorily.

It only now remains for us to describe the grand Ganges canal, the last and greatest of the canals of irrigation in progress of execution by the British Government. It will have been remarked that, in nearly all the works previously described, we have appeared as restorers rather than as original projectors. It is true that our restorations of the works of our Mahomedan predecessors are virtually new designs. Beyond the idea of the work, and the occasional adoption of the alignment they had selected, we have borrowed little from them: while the scale on which our restorations have been conducted, the numerous improvements that have been introduced, and the extensions that have been executed, entitle us to the merit of originality. Still we must not in any way seek to lessen the high credit due to the enlightened men, by whom the ancient canals were designed and executed. They knew the wants of the country, and they supplied them with an ability, of which we are willing admirers.

The great Ganges canal is however purely a British work, and occupies a field unoccupied before. That it will be the greatest work left to bear testimony to our national character, it would be rash to assert, when Railways are looming, however faintly, in the distance: but that, both in the scale of its construction, and in its influence on the material prosperity of the country, it will be one of the greatest, there can be no hesitation in affirming.

The early history of the Ganges canal may be disposed of in a few sentences. The first officer, who seems to have seriously contemplated the employment of the waters of the Ganges for irrigation, was Colonel Colvin, of whose labours west of the Jumna we have already had occasion to take notice. When in 1836 this officer, at that time superintendent general of canals, delivered over charge to his temporary successor, Colonel Cautley, he strongly recommended that an examination of the country should be made, with a view to ascertain the practicability of the project. Such an examina-

tion was actually made during the course of the year by Colonel Cautley, but with results so little encouraging, that the idea of the canal was temporarily abandoned by him. Colonel Colvin, however, continued hopeful of ultimate success, and recommended another examination, commencing at a higher point on the river than that first selected, and carried on a more circuitous line, so as to avoid some very impracticable country, which had been met with.

The question however continued to be one rather of interesting speculation, than of any practical importance, until the calamitous events of the great famine in 1837-38 attracted the serious attention of Government to the subject. The sacrifice of revenue to the extent of nearly a million sterling, the harrowing distress to which the whole agrestic population of the lower and central districts of the Doab were subjected, the painful inability of Government, or the European community, to afford relief commensurate with the necessity for it, and the striking contrast presented by those districts, for which canal irrigation had been previously provided, were circumstances too remarkable to be passed lightly over. Colonel Cautley's views on the subject were accordingly submitted to Lord Auckland, then Governor General of India, with the recommendation that such expenditure should be authorized, as might be found necessary in examining the difficult country, through which the first part of the suggested canal would be carried. His Lordship gave immediate sanction to the inquiry, and, to his honour be it said, he manifested during the whole course of his administration, both privately and officially, the deepest interest in the project.

A minute and careful examination of the country, between Hurdwar, the proposed head of the Canal, and Rurkhí, the point at which it would enter upon the "Baugar," or the high land of the Doab, was now instituted, and the results are embodied in Colonel Cautley's first Report on the Ganges canal, which bears date the 12th May, 1840.

Of this report we need say no more than that it established, in the most satisfactory manner, the practicability of the project, shewing that there were no difficulties in the line of the "Khadir" from Hurdwar to Rurkhí, which might not be overcome at a reasonable cost.

This first project however was limited to constructing a canal of such dimensions only, as would secure a remunerating return on the expense incurred. The practicability of passing the valley of the Ganges having been proved, it was left to the Governments in India and England to determine the scale, on which the works should ultimately be carried out. It is scarcely ne-

cessary to add, that the appropriation of the entire visible stream at Hurdwar, so as to increase the discharge of the canal from 1,000 to nearly 7,000 cubic feet per second, was earnestly recommended by Colonel Cautley.

In 1840-41 the Report came under the consideration of the Court of Directors, who decided, wisely and worthily, that the projected canal should be constructed on such a scale, as would admit of irrigation being supplied to the whole of the Doab, or the country lying between the rivers Ganges, Hindun, and Jumna, forming the principal part of the North Western Provinces. They at the same time acknowledged Colonel Cautley's services by directing him to be presented with a donation of 10,000 rupees. We are almost ashamed to add that this reward was robbed of nearly half its value, and all its grace, at the recommendation of the Military Board in Calcutta, who deducted from it the total amount of the extra expense, to which Government had been put by the temporary appointment of an officer to carry on Colonel Cautley's current duties, as superintendent of the Doab canal, while he was employed in the survey of the Ganges Khadir. We have never been able to understand how Government could have sanctioned such a pitiful saving on grounds so palpably unjust.

The Court of Directors, being desirous that a work of such magnitude and cost as the proposed canal should undergo the most careful examination and discussion, directed a committee of experienced Engineer officers to be associated with Colonel Cautley in reporting on the best method of carrying their enlarged views into effect. This committee which consisted of Colonel F. Abbott, C. B., and Major Baker, of the Engineers, with Colonel P. S. Cautley, submitted their report in February 1842, and recommended that the canal should be constructed of such dimensions as would admit of its discharge being 6,750 cubic feet per second, which supply was considered sufficient for the irrigation of the whole Doab.

On receipt of the Committee's report, Government gave orders for the vigorous prosecution of the work; but before the necessary arrangements could be matured, Lord Auckland's administration ceased, and Lord Ellenborough's began.

With this event commences a dreary and distasteful chapter in the history of the great canal. It is not our intention to withdraw the veil that now conceals the details from public view. We are not aware that any good end would be served by acting otherwise; and we will best consult the feelings of those most interested, by consigning the particulars of Lord Ellenborough's proceedings to that oblivion, which best befits them.

It is therefore sufficient to state that no assistance in qualified officers could be procured, and that from April 1842 to February 1843, the works were carried on by the aid of a single uncovenanted assistant.

It was not until July 1843, that Colonel Cautley was relieved from the executive duties of the Ganges, Eastern Jumna, and Dhún canals, and thereby enabled to turn his undivided attention towards the completion of the survey, and of designs for the first of these works.

Meanwhile however the original project had been totally altered. A minute of the Governor General directed that the Ganges canal should be primarily a canal of navigation, not of irrigation; and that only such portion of the water, as was not required for the former object, should be applied to the latter. This decision was opposed to the views of every man, who knew any thing either of the true necessities of the country, or of the nature of the works projected; and to carry it into effect to its full extent would have been to sacrifice all, or nearly all, the benefits, which the original design secured to the agriculture of the country, and to give in return, what at best, in this railway epoch, was a second rate means of transport to its commerce.

During the cold weather of 1842-44, the survey of the line was resumed, and carried on to the terminus at Allahabad. On the results of this survey three different projects were based, securing the benefits of irrigation to the country, so far as was consistent with the main object prescribed; and it was left to Government to decide which of the three should be adopted.

Before any resolution could be formed, Lord Ellenborough's administration ceased; and the final decision of the question devolved on Lord Hardinge. During the course of the year 1845, Colonel Cautley returned to England, and was succeeded in the directorship of the Ganges canal by Major Baker.

The supposed effect of the existing canals of the Jumna, in diminishing the salubrity of the districts through which they were carried, created a new obstacle to the progress of the Ganges canal; and a Committee was appointed to investigate the question as thoroughly as possible. This Committee, consisting nominally of three (but actually of two) officers, Major Baker and Dr. Dempster of the Horse artillery, commenced their labours in November 1845, but were interrupted by a summons to do military duty with the army of the Sutlej. Their researches were not resumed until November 1846; and their report, an invaluable storehouse of facts, which we will examine hereafter, was submitted to Lord Hardinge at Roorkhi in March 1847.

The effect of the report was satisfactory. Lord Hardinge recommended the vigorous prosecution of the work. Arrangements were made for the supply of ample means, both in men and money; and at length, in 1848, twelve years after the first line of levels for the project had been taken, the Ganges canal may be said to be fairly in progress, on a scale commensurate with its importance, and on the plan, which its projector advocated from the first, and, amidst all opposing influences, never ceased to advocate,—that namely of a canal, primarily of irrigation, but provided with all works necessary for purposes of navigation. This long period of delay has not been all evil; no project has ever undergone more searching investigation, or more minute discussion, than that of Colonel Cautley for the Ganges canal. Every paper connected with it has been printed, and submitted to professional and general criticism; errors of detail have been brought forward, but none that affect the stability of the project; and Government may carry it forward to completion with the satisfactory assurance, that every part of it has been so proved and tested, as to justify confidence in the soundness of the whole.

We will now endeavour to give an outline sketch of the canal, as in progress of execution.

At about  $2\frac{1}{2}$  miles north of Hurdwar, a branch leaves the right bank of the River Ganges, and, flowing past the sacred ghats, and under the picturesque buildings of the town, follows a course, generally parallel to that of the parent stream, which it rejoins at a point 30 or 40 miles to the southward.

Possession has been taken of the upper portion of this branch for the head of the canal; and through it the supply of 6,750 cubic feet per second will be brought to Myapúr, a point about  $1\frac{1}{2}$  miles south of Hurdwar, where the artificial channel commences.

The first masonry works are constructed at Myapúr. They consist, 1st, of a dam across the branch of the Ganges, having 38 openings of 10 feet each, fitted with gates or sluices, and flank overfalls by which a clear water-way of 517 feet is secured for the passage of floods from the Ganges during the rainy season; and 2d, of a regulating bridge across the canal bed, having 200 feet of water-way in ten openings of 20 feet each, fitted with all the machinery necessary for regulating the admission of water into the canal. The dam and bridge are connected by a long line of masonry revetement; and, on the opposite bank, the similar line of revetement with bathing ghats, &c., complete the works at the head of the artificial channel.

All these works were originally designed in a chaste and sim-

ple architectural style: but modifications were introduced, which have excited much unfavourable criticism. These are to be removed; and the works will then be worthy of their beautiful position, and will make the entrance to the canal as ornamental, as it will be useful.

Considerable anxiety has naturally been manifested by the brahmins of Hurdwar, lest these works, and especially the excavations in the bed of the river opposite the Pyrie, or sacred bathing ghat, should interfere with their functions, or destroy the character of Hurdwar as a place of pilgrimage. For such feelings the utmost consideration has, of course, been shown; and the arrangements for clearing the bed of the river will be so made, as that the facilities for bathing will be improved, and the risks of accidents, which now exist, removed.

We have before stated that the grand, indeed the only, obstacles to the construction of the canal are met with on the first twenty miles from the head, or between Hurdwar and Roorki. These difficulties arise from the course of the canal intersecting at right angles the whole of the drainage of the Sub-Himalayas, of which the western valley of the Ganges is the receptacle.

This drainage, independently of numerous minor channels, which are unimportant, is collected into three great lines, being the valleys of the Puthri, the Ruthmú, and Solaní rivers, draining respectively about six, eleven, and eight, miles in length of the hill country. The Puthri drainage, being divided among a number of minor channels, is not difficult to control; but the Ruthmú and Solaní are impediments of the highest class.

The artificial channel of the canal leaves Myapúr with a transverse section, having a constant width at bottom of 110 feet, and a variable width at top, dependent on the depth of excavation, but which may be stated generally to be about 200 feet. The depth of water provided for is 10 feet, and the slope of the bed about 18 inches per mile. After pursuing its course for about  $6\frac{1}{2}$  miles, and crossing several lines of drainage, which are disposed of either by dams, or inlets and outlets, the canal is lowered into the valley of the Puthri river by means of the Bahadurabad Falls, which consist of two descents in masonry of 8 feet each, exactly similar to, although on a very much larger scale than, those of the Eastern Jumna canal. These will be very massive works; and when the canal is opened, and its huge volume of water is poured over them, the sight will be a most striking one. Even with the small supply of the Eastern Jumna canal, the turmoil at the base of the Belka Falls, which are 15 feet in height, is most formidable to behold. What then will it be, when ten times the quantity of water is thrown over

falls of 16 feet ! The masonry had need to be of the very best materials and workmanship, to withstand the action of such a force.\*

For purposes of navigation, whether by rafts, or boats, a side channel furnished with locks, leaving the main canal about three quarters of a mile above, and rejoining it about one quarter of a mile below, the falls, has been provided.

After leaving the Bahadurabad Falls, the canal traverses for about five miles the low land intersected by the Puthri river, and its numerous tributaries. The former is passed by a dam having ten openings of ten feet each, and flank overfalls, leaving a clear water-way of 130 feet; and the latter, being of minor importance, by inlets on one bank, and corresponding outlets on the other.

At the termination of the Puthri Valley, the Dhumoura Falls, similar in all respects to those at Bahadurabad, lower the canal to the level of the Ruthmu river, one of the two great obstacles to its progress.

In the original design this river was passed by a dam, having forty openings of 10 feet each, fitted with gates for retaining the canal supply; but the great floods of the year 1841 rendered an extension of the work necessary. As now projected, the Ruthmu dam will have forty central openings of 10 feet each, and two side openings of 100 feet each, with flank overfalls; so that the clear waterway, above the pier heads, will be very nearly 800 feet. A regulating bridge, similar to that at Myapûr will be built across the canal, with the view of excluding the waters of the Ruthmu during floods. We do not consider it necessary to give details of these works, as they are similar to those we have already described on the canals of the Jumna.

The valleys of the Ruthmu and Solani Rivers are separated by a high ridge of land, about two miles in breadth, through which the canal is carried with a maximum depth of digging of 37 feet. At the village of Bajuheri, it enters the valley of the Solani, which at this point is 11,680 feet, or nearly  $2\frac{1}{4}$  miles, in width. The level of the canal bed here begins at once to rise above the surface of the country; and the great work of embanking the channel, or forming the earthen aqueduct, commences.

This work, by which the canal is brought through the valley

\* The Bahadurabad and Dhumoura Falls were projected to appear in the original design of the canal, as above described, but in execution they have been modified; the necessary descent being made in two separate Falls, each of 8 feet, instead of a single one of 16 feet. The change is judicious, considering the enormous force to be dealt with.

to the Solani river, will consist of an earthen embankment, or platform, raised to an average height of about  $16\frac{1}{2}$  feet above the country, having a base of about 350 feet in width, and a breadth at top of about 290 feet. On this platform, the banks of the canal will be formed, 30 feet in width at top, and 12 feet in depth. These banks will be protected from the action of the water by lines of masonry ghats, formed in steps extending along their entire length, or for nearly  $2\frac{1}{4}$  miles north of the Solani.

The river itself is crossed by a masonry aqueduct, which will be not merely the largest work of the kind in India, but one of the most remarkable for its dimensions in the world.

The total length of the Solani aqueduct is 920 feet. Its clear waterway is 750 feet, in 15 arches of 50 feet span each. The breadth of each arch is 192 feet. Its thickness is 5 feet: its form is that of a segment of a circle, with a rise of 8 feet. The piers rest upon blocks of masonry, sunk 20 feet deep in the bed of the river, and being cubes of 20 feet side, pierced with 4 wells each, and undersunk in the manner practised by natives of India in constructing their wells. These foundations, throughout the whole structure, are secured by every device, that knowledge or experience could suggest; and the quantity of masonry sunk beneath the surface will be scarcely less than that visible above it. The piers are 10 feet thick at the springing of the arches, and  $12\frac{1}{2}$  feet in height. The total height of the structure above the valley of the river will be 38 feet. It will not therefore be an imposing work, when viewed from below, in consequence of this deficiency of elevation; but, when viewed from above, and when its immense breadth is observed, with its line of masonry channel, which, when completed both north and south of the river, will be nearly 3 miles in length, the effect must be most striking.

The waterway of the canal is formed in two separate channels, each 85 feet in width. The side walls are 8 feet thick, and 12 feet deep, the expected depth of water being 10 feet. Various buildings are provided at the flanks of the aqueduct, and many minor arrangements are made, which it would be wearisome to describe here. A continuation of the earthen aqueduct, about  $\frac{3}{4}$  of a mile in length, connects the masonry work with the high bank at Roorkhí, and brings the canal to the termination of the difficult portion of its course. Such details, as we have given, convey, we are well aware, but a very imperfect idea of the work. They are however our only substitutes for plans, or other graphic representations; and we must hope for their being

intelligible enough to give some conception of the magnitude of the structures.

It will perhaps give additional clearness to what has now been stated, if we exhibit some of the details of the amount of labour, and the quantity of materials, which will be required to complete the work within six years; and with this view we give the following calculations made by Major Baker, late director of the canal.

“Calculation of means required to complete the Solani Aqueduct in six years. For 8,749,524 cubic feet of masonry in aqueducts and revetements will be required—

Bricks (12" × 6" × 2½)	69,996,192
Sûrkhi* (1,924, 891 cubic feet).....	13,471,258
Total of Bricks...	83,470,450
Lime.....	962,417 cubic ft.

Or say eighty-four millions of bricks, and one million cubic feet of lime.

The work people required in preparing and using the materials are as follow :—

	<i>Brickmakers.</i>	<i>Labourers.</i>
In Brickmaking (inclusive of wood cutting).....	141,666	3,143,333
	<i>Masons.</i>	
In building Masonry and laying Floors.....	306,233	781,916
In pounding Sûrkhi.....		611,632
In undersinking the Foundation Blocks.....		311,040
In earthwork of Aqueduct (exclusive of draught cattle)		1,972,750
The total labour required is therefore		
Brickmakers.....	141,666	
Masons.....	306,233	
Labourers.....		6,850,701

The brickmaking, to be completed in five years, allowing 190 days each year, (deducting Sundays, and rainy seasons) would require per diem 149 brickmoulders, and 3,309 labourers.

The remaining work, to be completed in six years, allowing 250 working days per annum, would require per diem 204 masons for five years, and for the 6th year 2,471 labourers

The workshops will require fifty smiths, and 80 to 100 carpenters per diem.

An establishment of about 1000 bullocks (exclusive of contract carriage) will be required for the earth waggons, and other purposes.”

The total cost of the canal from Hurdwar to Roorkhi is estimated at Rs. 30,12,133-4-3, or nearly £300,000, of which sum

\* Sûrkhi is made of bricks carefully pounded and sifted.

the aqueduct will absorb a little more than one half, or Rs. 15,80,704-6-11, being about £158,000.

The heavy cost, and the admitted difficulties in constructing so great a work as the Solani aqueduct, led to much discussion, as to the practicability of avoiding it by carrying the canal on a circuitous route, and crossing the river at a higher point in its course by means of a dam. This question was carefully investigated by the special committee with this result, that while the circuitous route was perfectly practicable, it was exposed to many objections: and that, although it might lead to a saving of expense in the first instance, it would inevitably entail much greater ultimate outlay in maintenance, than if the direct course were adopted. The opinion of the committee was therefore unanimously in favour of the aqueduct; and Government decided the point in accordance with their views.

At Roorkhí, formerly a small village but now a large European station, the head-quarters of the canal, with the workshops, model-room, office, &c., have been established. In the vicinity arrangements have been made for a railway about two or three miles in length, along which the earth for the aqueduct will be carried. One or more steam engines will shortly be in active exertion; and the executive officers are preparing themselves to take full advantage of the various mechanical means and appliances, whereby the construction of the great works under their charge may be facilitated.

Means at the same time have been adopted by the Government of the North Western Provinces to rear a class of men, European and native, qualified by superior education to become efficient subordinate agents in the execution of the works; and the Roorkhí College, under its excellent Principal, Lieut. MacLagan of the Engineers, promises to become an institution of the highest utility to the canal, and other departments of public works. The design of the institution is unexceptionable: and its practical details will doubtless be perfected by degrees, as the necessity for modifications become apparent. We have already trespassed so much on the patience of our readers, that we must not attempt to give any description of the college system. We will only say that the course of instruction adopted appears likely to produce a class of men, well qualified for the varied duties which will be required at their hands.

From Roorkhí the canal continues its course, without meeting with obstacles of any kind, through the centre, and along the most favourable levels, of the Doab, throwing off branches which rival in dimensions the largest of the existing canals. The first of these, the Futtehghur branch, which leaves the canal at about

50 miles from the head, is 150 miles in length, and will have a discharge equal to 1,240 cubic feet per second. The second, or Bolundshuhur, branch has a length of 70 miles, and a discharge of 520 cubic feet per second. The third, or Etawah, branch is 172 miles long, with a discharge of 1,336 cubic feet per second. The fourth, or Cawnpur, branch has a length of  $43\frac{1}{2}$  miles, and a capacity of section equal to a discharge of 635 feet per second. This branch forms, according to the recommendation of the special committee, the connecting link for navigation between the Ganges and the canal; and the construction of a series of locks at Cawnpur will admit of an easy passage for boats from the one line to the other. The main line of canal from Cawnpur to Allahabad, a distance of 173 miles, has a supply for purposes of irrigation amounting to 1,076 cubic feet per second. The preceding distribution of the supply to the branches, and corresponding allowance for the intervening portions of the main line, leave available for purposes of navigation exclusively a supply equal to 250 cubic feet per second. In the event of the navigable terminus for river traffic being established at Cawnpur, this supply would be reserved for the branch to that place; if Allahabad is preferred, which however is not probable, the increased supply must be appropriated to the main line.

The total length of the Ganges canal and its branches is as follows:—

Main line from Hurdwar to Allahabad .....	153 miles
Futtehghur Branch .....	160 "
Bolundshuhur ditto .....	70 "
Etawah ditto .....	172 "
Cawnpur ditto.....	$43\frac{1}{2}$ "
<hr/>	
Total, 898 $\frac{1}{2}$ ..	

As each of the branches, as well as the main line, will be adopted for internal navigation, the commerce of the Doab will participate with its agriculture in the benefits to be derived from the canal. For purposes of cross communication, bridges will be provided at every two or three miles. All the various works required for the regulation of the supply, for the convenience of the establishment, for mills, &c., will be constructed wherever required. Plantations will be formed within the canal limits on each bank. Orchards of grafted mango trees, similar to those so successfully established on the Eastern Jumna canal, are estimated for. The transverse section of the canal is gradually diminished, as each branch draws off its proportion of the supply from the main line. From the head to the Futtehghur branch the bottom width continues, as before mentioned, to be 110 feet, and the depth 10 feet. Between the Futtehghur and

Bolundshuhur branches, the bottom width is reduced to 130 feet, and the depth to 9 feet. From the Bolundshuhur branch head, the width becomes 108 feet, and the depth 9 feet. After the departure of the Etawah branch, the bottom width is 90 feet, and the depth  $7\frac{1}{2}$  feet. At the 250th mile, the section is again reduced to 80 feet in width, and 7 feet in depth. From the head of the Cawnpur branch the section is 75 feet in width at bottom, and 6 feet deep; and, at the Allahabad terminus, the width will be 25 feet at bottom, 37 feet at top, and 4 feet in depth. Throughout the canal, the side slopes will have bases equal to one and a half their heights, and the longitudinal slope of the bed will vary from 15 to 12 inches per mile.

The distribution of water for purposes of irrigation will be effected exclusively by means of Rajbuhās, or principal water-courses, under the superintendence of Government officers. No private water-courses will be permitted, either from the main canal, or its branches. The full benefits of the most economical and most salubrious method of irrigation will thus be secured to the country from the commencement.

The maximum cost of the canal, supposing that Government constructs at its own expence not only the main line and branches, but also all the primary channels of distribution, or Rajbuhās, is estimated at  $4\frac{1}{2}$  millions sterling. This estimate is a most liberal one, and there is no probability of its being exceeded.

Having thus given an outline of the works, and stated their probable cost, we have now to exhibit the benefit which will be secured to the Government and the community, as the return for so large an expenditure.

The first point to determine is the extent to which the Doab will be irrigated by the canal and its branches; and fortunately, by means of the invaluable statistical tables prepared by the Agra Government, we are now enabled to do so with a degree of accuracy not before attainable.

The districts to which the influence of the Ganges canal and its branches will extend, together with details of their assessed areas, are given below. From the areas of Saharunpur, Muzaffernuggur, and Meerut, we have deducted the portions already provided with means of irrigation from the Eastern Jumna canal. We have taken from the tables only the cultivated and culturable areas, because it is for these alone that irrigation has to be provided.

	<i>Cultivated area in acres.</i>	<i>Culturable area in acres.</i>
1. Saharunpūr.....	501,606	392,508
2. Muzaffurnuggur.....	505,830	236,216
3. Meerut.....	972,213	476,427
4. Bolundshuhur.....	557,071	359,713
5. Allyghur.....	901,405	129,710
6. Muttra.....	676,323	106,129
7. Furruckabad.....	652,075	305,095
8. Mynpūri.....	613,338	182,000
9. Etawah.....	477,901	135,850
10. Cawnpūr.....	781,173	163,565
11. Futtehpūr.....	518,812	123,985
12. Allahabad.....	997,508	231,597
Totals.....	8,255,255	2,846,793

The total area, cultivated and culturable, of the above twelve districts is therefore 11,102,048 acres.

Now supposing that the full supply of the canal, being 6,750 cubic feet per second, is rendered available for irrigation, as ultimately we have no doubt it will be, we know from experience on the canals of the Jumna, that each cubic feet of this discharge is sufficient for the irrigation during the year of 218 acres. The total area, which would be actually watered during the year, would consequently amount to  $6,750 \times 218 = 1,471,500$  acres, or, for facility of calculation, say 1,500,000 acres.

Assuming, as a standard of comparison for the whole of the Doab, the best irrigated districts on the Eastern Jumna canal, namely the western portion of Meerut, we find by reference to the statistical table, previously given for the abovementioned canal, that irrigating villages actually water one-third of their total areas. Consequently the supply of the Ganges canal would furnish abundant irrigation for an area of  $1,500,000 \times 3 = 4,500,000$  acres.

In districts benefitting by canal irrigation, it is found that for such localities as, from position, difficulties of level, or other causes, cannot be provided with water, irrigation from wells is extensively employed. From data given in the Special Committee's report it would appear, that, in the best irrigated district on the Western Jumna canal, the proportion of canal to well irrigation is as five to one; assuming this for the Doab, we should have an area, irrigated from wells, amounting to 900,000 acres.

The total area, for which irrigation would be provided, would accordingly amount to 5,400,000 acres. But the whole irrigable area of the Doab is, as formerly shewn, 11,102,048 acres. This tract of country would therefore be irrigated to the extent of very nearly one-half its surface,—a proportion equal to that of the best

district west, and nearly double that of the best district east, of the Jumna. In making this comparison it should not be overlooked, that the best districts on existing canals have been selected as standards for the whole Doab, a measure which tends to give a more limited range to the influence of the Ganges canal than would have been the case had inferior tracts been selected. But we are anxious to avoid all appearance of exaggeration in estimating the benefits to be anticipated from this great work, and, as a rule, will select such data as give minimum results, believing these to be abundantly convincing.

The results just given are not quite so favourable as those shown either in the Special Committee's report, or in Colonel Cantley's second report; but we believe them to be as just, and as nearly correct, as it is practicable to make them. An error, unimportant as it affects the project generally, but leading to an exaggerated estimate of the irrigating capabilities of the canal, crept into Colonel Cantley's first report, and vitiated the conclusions on this branch of the question therein arrived at. The error was however fortunately an isolated one, and, although magnified at the time of its discovery for special purposes, was in reality of very little consequence.

The direct pecuniary returns from the canal may be estimated as follows:

Water rent.....	11,71,500
Mills .....	1,00,000
Transit Duties .....	60,000
Sundries, Canal produce, &.....	7,000

Total...Rs. 16,38,500

The indirect return from increase of land revenue, which from the analogous cases of existing canals we are entitled to anticipate, may be estimated from data furnished by the statistical tables formerly given. Assuming for the Doab generally the average results on the Eastern Jumna canal, we find that the land revenue in districts irrigated by canals exceeds that in districts not so irrigated by Rs. 453 per square mile. Now the area, which will come under the influence of the Ganges canal, amounts to 4,500,000 acres, or very nearly 5,312 square miles. The increase of land revenue would accordingly be as follows:

5312 square miles, at Rs. 453 per mile ... Rs. 2,406,536.

The total pecuniary returns, direct and indirect, would therefore be Rs. 40,14,836, or nearly £400,000 per annum.

From experience on existing canals, and assuming as the standard of comparison the Eastern Jumna canal, the most expensive of the whole, the annual outlay for the ordinary

repairs, and the regular establishments of the Ganges canal, is estimated at very nearly Rupees 4,00,000, or £40,000. For increased expenses in the Civil departments a farther sum of £10,000 per annum may be allowed.

The net revenue from the canal when in full operation would therefore amount to £350,000 per annum, which gives a return on the invested capital (amounting to £1,250,000,) of 28 per cent. This very favourable result is by no means an exaggerated one. It is less by 8 per cent. than the actual returns on the Western Jumna canal, and more by only 4 per cent. than those of the Eastern Jumna canal.

We have already shown that neither of these works has yet attained its maximum; and, even with all the improvements that can be effected in them, they must still continue inferior to the Ganges canal in the arrangements for distributing and economising their respective supplies of water. Such considerations, therefore, warrant us in considering the results just given as moderate. Our personal conviction is, that when this great canal has attained its highest state of development, it will secure to the state a total revenue of little less than half a million sterling per annum.

The benefits which will be secured to the community by the execution of the canal are in no wise inferior to those derived by the Government. In exemplification of the former we must now give a few details; and, first, of the value of agricultural produce, which will be placed beyond all risk of injury from inadequate supplies, or the total failure of rain. From tables now before us, showing the proportions of the different kinds of crops cultivated on existing canals, we have formed the estimate given below:—

#### KHURIF CROPS.

Proportion of Sugar, Indigo, &c.	$\frac{1}{6}$ th of the whole.
„ of Cotton, .....	$\frac{1}{2}$ th „
„ of Rice and Sundries.	$\frac{1}{3}$ ths „

#### RUBBI CROPS.

„ of Wheat, Barley, &c..	$\frac{3}{8}$ ths „
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Assuming these proportions as approximate for the whole Doab, we have the following results, the rates per acre being the same as given with confidence by Major Baker, and employed in our corresponding estimates for the Eastern and Western Jumna canals.

Calculation of the gross value of crops which will be secured from injury in famine seasons by the grand Ganges canal:—

## KHURIF CROPS.

250,000 acres of Sugar and Indigo, at Rs. 80 per acre .....	2,00,00,000
125,000 „ of Cotton, at Rs. 48 per acre .....	60,00,000
375,000 „ of Rice and Supdries, at Rs. 38½ per acre ...	1,41,37,500

## RUBBI CROPS.

750,000 „ of Wheat, Barley, &c., at Rs. 48 per acre .....	3,60,00,000
15,00,000 Total .....	7,61,37,500

Of this sum (upwards of 7½ millions sterling per annum) about one-tenth will return to Government in the form of land and water-rent, while the remainder will be the property of the agricultural community. It is needless to dwell on the importance of placing property, equal to between one-fifth and one-sixth of the value of the agricultural produce of the entire Presidency of Agra, beyond the influence of the seasons, and of insuring to the cultivators, under all circumstances, a certain return for their labour. The influence of the canal on the improvement of the Doab must necessarily be immense. This great tract will become the garden of the North Western Provinces; and we shall hear no more of those devastating famines, which have hitherto swept across it, bringing physical wretchedness and moral degradation in their train.

In addition to the certainty of returns, the actual produce of irrigated land exceeds materially that of land unirrigated. From data collected during the progress of the revenue survey, it appears that the excess on irrigated over unirrigated land may be taken for the Rubbī, or cold weather crops, as being about 550 lbs. per acre for wheat, and about 730 lbs. for barley. Assuming the average of these for the general excess, we have the following estimate of the increase of produce due to the existence of the canal: 750,000 acres under Rubbī crops will amount

at 640 lbs. per acre, to ..... 480,000,000 lbs.

The value of this increase, allowing the market rate to be one maund, or 80 lbs. per rupee, would amount to Rupees 60,00,000, or £600,000 per annum.

We have not data sufficient to enable us to estimate in detail the increase on the Khurif crops; but considering that this season, including as it does Sugar, Indigo, and Cotton, is by far the most profitable to the cultivator, and that irrigation exercises an equally beneficial effect upon it, as upon the produce of the Rubbī, we may with great safety conclude that the increase during the Khurif will be at least equal to that during the Rubbī. Hence the total increase of the value of the produce would amount to £1,200,000 per annum, a sum nearly equal to the

total capital invested in the canal. Our results under this head are again much lower than those given by Colonel Cautley, in para. 8 of the preface to his first report: but the calculations shown there are evidently affected by the error as to the capabilities of the canal for the irrigation previously alluded to, and require to be reduced in consequence.

A farther source of benefit to the community will be found in the reduced cost of canal, as compared with well, irrigation. The average area irrigable by one masonry well is ten acres; and to bring under irrigation a tract of country, equal to that which will be watered by the Ganges canal, would consequently require 150,000 wells. Estimating the cost of each of these at Rs. 200, the total capital required for their construction would amount to Rs. 3,00,00,000, or £3,000,000—being considerably more than twice the sum necessary for the Ganges canal, with all its works for supply and distribution of water. The above sum of three millions only provides the water: to distribute it, the labour of two able-bodied men and eight bullocks is required for each well, together with machinery for raising the supply to the surface. To provide bullocks for working 150,000 wells would cost Rs. 90,00,000, or £ 900,000; and, allowing £ 100,000 more for machinery, it appears that to provide well irrigation for 1,500,000 acres would require a capital of £ 4,000,000.

The annual expenses for irrigation may be estimated as follows:—

300,000 men, at Rs. 30 per annum .....	Rs. 90,00,000
1,200,000 bullocks, at Rs. 12 per annum .....	„ 1,11,00,000
10 per cent. on total capital .....	„ 40,00,000
Total annual expense of well irrigation for 1,500,000 acres, .....	} Rs. 2,74,00,000

Let us now contrast the above with the cost of canal irrigation. We will suppose that, as on existing canals, the cultivators bear all expenses of constructing and maintaining the principal water-courses, or Rajbuhās. We formerly stated, while discussing the Rajbuhā system of the Eastern Jumna canal, that the original cost of these works amounted to Rs. 2½, and the annual expenses to 5 annas per acre. The capital required would consequently be Rs. 37,50,000, or £ 375,000. The annual expenses would be as follows:—

Government water rent, at R. 1 per acre .....	15,00,000
Water-course repairs, at R ½d .....	5,00,000
30,000 lads, at Rs. 24 per annum .....	7,20,000
10 per cent interest on capital .....	3,75,000

Total annual expense of canal irrigation for 1,500,000 acres, Rs. 20,95,000

By comparing these calculations it will be apparent, that well irrigation is upwards of thirteen times more expensive than irrigation from canals; and, as one or other of these methods must be had recourse to, if cultivation is to be secured from the effects of drought, there can be very little question as to which is to be preferred. The saving to the agricultural community from having means of canal irrigation at its command will be nearly  $2\frac{1}{2}$  millions sterling per annum. We have considered it necessary to enter in some little detail on this point, because a mistaken idea has been entertained, that, if the funds appropriated to the Ganges canal had been applied to the construction of wells, the results would have been equally, if not more, favourable to the cultivators; these, however, on existing canals give the best possible proof of their own views on the question, by abandoning at once their wells, and incurring willingly all the expenses required for providing their lands with water from the canals.

We have not the means of shewing in any numerical form the advantages which would result to the commercial community by means of easy transport furnished by the main canal and its branches. When however it is borne in mind that the canal runs centrically through the Doab, connecting all its important parts; that its branches diverge to the right and left of the centre line; and that (taking altogether) an internal navigation, having connecting points with the two great rivers of the Doab, nearly 900 miles in length, will be provided, it is certain that great facilities for commerce must be secured. The true commercial way is of course the Rail-road; but in subordination to this (and a navigable canal of irrigation can never be other than a mere auxiliary to the Rail) the Ganges canal will perform an important part in stimulating the commercial progress of the districts through which it will be carried.

We have now, we believe, sufficiently illustrated the benefits which will be secured to the state and the community from the execution of this grand canal. We have shown that it will add to the revenue of the Government the sum of £350,000 per annum; that it will protect from the risk of famine a tract of country, containing upwards of 11,000,000 acres, inhabited by nearly  $6\frac{1}{2}$  millions of souls, and paying to the state an annual land revenue of nearly £1,800,000. It has further been shown that, in the event of a failure of the ordinary rains, agricultural property to the value of  $7\frac{1}{2}$  millions sterling would be secured to the community; that an increase in the produce of the land, valued at £1,200,000 per annum, would be obtained; and that, as compared with the only other available method of irrigation, a saving of expense to the amount of  $2\frac{1}{2}$  millions annually

would be effected. In view of results such as these, and feeling that the hope of their realization is warranted by all past experience on existing canals, we may be forgiven some enthusiasm in our advocacy of a project so important.

It only remains for us now to take into consideration the objections to the Ganges canal, which from time to time have been advanced by parties unfavourable to the work.

The first, and by far the most important, of these is the effect on the navigation of the River Ganges, which will be produced by the abstraction at Hurdwar of so large a portion of the stream, as 6,750 out of 8,000 cubic feet per second.

To guide us in the discussion of this question, we have the results of an experience of the canals of the Jumna, extending over more than twenty-five years; and, as the relations of the rivers Jumna and Ganges to their respective canals are strictly analogous, we may, with confidence, predicate of the one whatever has been established by observation of the other. The two rivers differ only in magnitude. The physical circumstances regulating their respective supplies are strictly similar. The geological structure of their beds is the same. They originate in the same snowy range, and have their volumes affected to similar extents, and at the same times, by the ordinary influence of the season. We could desire no firmer basis therefore for inductions regarding the results of the Ganges canal, than the facts furnished to us by our experience of the canals of the Jumna. To the influence of these latter on the volume of their supplying river we must therefore first give our attention.

To all familiar with the phenomena of the Himalayan rivers it is well known, that, independently of the increase of volume due to the periodic rains, which in ordinary seasons is experienced from July till November, the melting of the snow, during the months of April, May, and June, exercises a most perceptible influence on their supply. On the canals of the Jumna all anxiety regarding the supply ceases in April, when the river begins to rise. This rise continues to increase steadily until the rainy season commences, when the increase of supply is so great, that the abstraction of the water required for the canals produces no perceptible effect on the river. The whole of the canal bunds are then swept away; and the great object of the executive officers is to keep the flood waters as much as possible to the bed of the river.

The effect of the canals on the navigation of the Jumna, whatever that effect may be, is therefore restricted to four months out of twelve, or from December to March inclusive.

During these four months it is occasionally necessary to

abstract the entire visible stream for the supply of the canals; and, for eight or ten miles below the bunds, or embankments employed for the purpose, the bed is dry. Beyond this distance water appears; and, by the time the river has reached the latitude of Saharunpūr, it has become a deep, unfordable stream, with a considerable velocity of current.

The explanation of this singular result, observed in greater or less degree in all the streams which traverse the tract of country under the Siwalic Hills, both east and west of the Ganges, is not difficult. From sections exposed by wells sunk in the vicinity of the Jumna, it is evident that the bed of the river is composed of a porous, readily permeable, stratum of shingle, resting upon clay, or clay sand, which is comparatively impervious. The upper, or shingle, stratum is thoroughly saturated with water to a depth, which, from sections we have observed, may be estimated at from sixty to eighty feet. The slope of the bed for the first ten miles from the lower hills is excessive, and there is consequently a considerable under-current through the shingle bed. The volume of the river may therefore be regarded as consisting of two separate parts: 1st, the visible stream over the shingle bed: and, 2nd, the invisible, or under, stream through the shingle bed. The canal bunds affect only the former; and it is the latter, which makes its appearance, when, at the lower levels of the river's course, the substratum of clay outcrops, and the porous shingle bed terminates. The under-current is thus thrown to the surface, and constitutes the main body of the river; and, with the additions it receives from affluents, is the volume available for navigation during the months of minimum supply.

Data are available from which a fair approximate estimate may be formed of the amount of this supply. The discharge of the Jumna at the canal heads, when measured in February, 1812, was found, as we formerly stated, to amount to 3,489 cubic feet per second.

The maximum discharge of the canals was at the same time ascertained to be 2,815 cubic feet per second; but, as we believe the supply of the Eastern Jumna canal has of late years been somewhat increased, we assume the maximum canal discharge to be 3,000 cubic feet per second. Until the river therefore falls to this extent, it is not necessary to close the bunds, and to abstract its whole supply.

The Jumna, when it was measured at Agra by Colonel Cautley during its period of minimum discharge, and when the canals were in full operation, was found to contain 2,061 cubic feet per second, of which 200 cubic feet were derived from the Hindun,

the solitary affluent of the Jumna between the lower hills and Agra, which carries a perennial supply. Hence there remain at Agra 1,861 cubic feet per second, as the product of percolation through the shingle bed of the stream, escape water from the canals, and drainage from lands under irrigation. That this latter item is not altogether unimportant may be inferred from the fact, that, owing solely to the sinking of the canal water into the ground, the surface level of the wells in many parts of the Western Jumna canals has been raised no less than 60 feet.

Now with the supply above specified of 2,061 cubic feet per second, it is an unquestionable fact that the Jumna continues to be a line of commercial traffic of the highest importance and utility. It is navigable for eight months of the year with facility for boats ranging from 500 to 1,000 maunds burthen; during the remaining four months, it is still navigable, but with difficulties due, not to any want of water, but to the faulty distribution of it in certain spots along the river's course. That the removal of these obstacles, by the application of the skill and funds at the command of Government, would materially facilitate the navigation, is undeniable. That their existence is very prejudicial to the commerce of the country would be a rash inference, when we find Government, not usually indifferent to commercial deterioration, doing little or nothing in the matter. The true state of the case is, that nearly the whole commerce, of which the Jumna is the river way, is carried on during those months of the year, when the influence of the rains, or of the melting of the snows in the Himalayas, is felt; and that the practical inconvenience, experienced during the months of minimum supply, has not been such as to cause any injury to the commerce of the country, or to attract the attention of Government in earnest to the subject. No one, indeed, can see the crowd of boats moored off Agra at nearly all seasons, and yet have any serious misgivings as to the influence of the canals on the navigation of the river.

The general conclusion therefore at which we arrive is, that after the Jumna has received the very worst treatment possible; after its whole visible stream at its debouchement from the hills has been abstracted for purposes of irrigation; after the larger proportion of the water thus drawn off has been thrown on a tract of country, draining into the valley of the Sutlej, and thus lost to the Jumna; while no efforts, worthy of being mentioned, have been made to improve its capabilities for navigation; and, while its volume is increased by but a solitary and insignificant affluent, the river still maintains its character as a navigable line of admitted volume, as high as Agra, or Muttra, during the

year, and even to Delhi during, and for some time after, the rainy season. If we are able to show that in every respect the circumstances of the Ganges will be more favorable than those of the Jumna now are, we may fairly, it is believed, conclude, that the execution of the Ganges canal will not be found to affect prejudicially the navigation of the river, below that point at which a provision is made for such a contingency.

Bearing the preceding statements in mind, let us now therefore direct our attention to the Ganges.

The proportion of the supply of the Jumna due to percolation has been stated at 1861 cubic feet per second. On the Ganges, supposing the entire visible stream at Hurdwar to be abstracted, and neglecting for the present all increase of volume from affluents, the proportion is determined as below:

3189: 1861; 8000: 4267.

or, to express this result in words, the Ganges at a point in its course, corresponding to the position of Agra on the Jumna, would have, from percolation, a discharge equal to 4,267 cubic feet per second, being 778 cubic feet more than the total measured discharge of the Jumna in the cold season, before any of its water has been drawn off for the canals. The position of Futteyghur on the Ganges corresponds very closely with that of Agra on the Jumna, and to the condition of the river at that place the above statement is applicable.

We have supposed the whole visible stream at Hurdwar to be abstracted; but it is not intended that it should be so. The estimated discharge of the Ganges canal being 6,750 cubic feet per second, the surplus, amounting to 1,250 cubic feet, would consequently be added to the under-current, raising the discharge at Futteyghur to 5,517 cubic feet per second.

The tributaries of the Ganges between Hurdwar and Futteyghur, or Cawnpúr, the Gangetic terminus of the canal, are numerous, and some of them important. The following give a perennial supply to the river:

The Bhát Nudi, and the Turai } (marshy) tracts of the Gan } ges Khadir.	The Ramgunga. The Yár Wulládar The Ism.
The East Kali Nudi.	

Measurements of the actual discharges of these streams have not been made, except in the case of the Ramgunga, which, immediately under the Hills, was found to have a discharge of 602 cubic feet per second. Its volume is described by Lieut. Jones of the Engineers, as rapidly increasing below the point at which his measurements were made. Two tributaries to the stream

were measured, and their united volume was found to be 567 cubic feet. Other tributaries are mentioned as affording a perennial supply; but they were not measured. It appears therefore probable that the Ramgunga alone increases the supply of the Ganges by about 1,500 cubic feet per second; and, supposing that the total volume of the other tributaries amounts only to 500 cubic feet—a very low estimate—we find the discharge of the Ganges at Futteyghur, or Cawnpur, to be 7,517 per second.

It must further be remembered, that the whole of the water taken off at Hurdwar will not be lost to the Ganges; a portion will be returned by the canal escapes, mills, &c.; and another portion by the percolation through the soil. These we do not attempt to estimate numerically; but the latter will certainly exceed materially that returning to the Jumna from the canals of the river.

We wish it to be understood that we are far from desiring to insist on the rigid accuracy of the preceding details. We give them as approximations founded on the best available data, and as much preferable to mere statements of opinion.

Making an ample allowance for the possible diminution of the supply from the tributaries on the left bank on the Ganges, by the execution of the projects now before Government for the extension of irrigation in Rohilkund, we still find, that the discharge of the river at Futteyghur will be nearly three times that of the Jumna at Agra. Now although the bed of the Ganges is throughout much wider than that of the Jumna, yet the portions occupied as channels for the streams during the cold season in both rivers bear but a small ratio to the total widths. These cold weather channels, formed as they are in sandy beds, are proportional in extent to the volumes of water they have to discharge, and they readily accommodate themselves to these. The capabilities of the two rivers for navigation would therefore be in the ratio of the quantities of water discharged by them, supposing them to continue in their natural state; and hence it may be inferred that the Ganges at Futteyghur will, after the execution of the Ganges canals, be navigable with considerably greater facility than the Jumna now is at Agra. But at Agra, as we before showed, the Jumna is a navigable stream of great importance and value; and therefore we conclude that, at Futteyghur, the Ganges will be available for traffic to nearly the same extent that it now is.

From Futteyghur, or Cawnpur, to Sükertal, the most northerly point to which boats now reach, the navigation of the Ganges

will probably be injured for four months out of twelve. Even at present the navigation between these points during the cold season is very precarious, and the extent of traffic very limited. It must therefore be expected that the withdrawal of 7-8ths of the visible stream at Hurdwar will add to the existing difficulties; and, should experience establish this, a fair claim will exist on the Government to devote some portion of the resources, which the canal will furnish, to the improvement of the river as a navigable line.

It being admitted that, north of Cawnpur, the river will suffer in the first instance from the withdrawal of the canal supply, it must now be stated that, so far as the traffic of the right bank is concerned, the canal itself will furnish a line of navigation much superior in facility of transit, safety, and economy to that now afforded by the river. In addition to the main line from Cawnpur to Hurdwar, the net-work of internal navigation, formed by the large branches of the canal, will supply, to the import and export trade of the Doab, accommodation for exceeding that now given by the river. And, should a navigable line be established to the Jumna near Calpi, or some other favourable point, there can be no reasonable doubt that the Ganges canal will prove a boon of the highest order to the commerce, as well as to the agriculture of the country.

The objection to the canal, on the score of the injury it will inflict on the navigation of the Ganges, therefore resolves itself into the fact, that for one-third of the year the inhabitants of the villages (for there are no large towns or marts) on the left bank of the river from Futteyghur to Gurmuktesur, a distance of about 150 miles, will have their present imperfect means of transport rendered somewhat more imperfect. The ultimate result however even here may be beneficial, should attention be directed to the removal of those obstacles which impede the navigation. On the Ganges nothing whatever has yet been done to regulate the supply of water, or to improve the channel during the cold season. It is not want of water that is complained of. There is abundant volume for the supply of a navigable stream; what is required is, to prevent this water spreading into wide shallows; and to restrict it to a bed of such dimensions, as that sufficient depth and velocity of current may be secured. It is not to be supposed that, with an adequate supply of water, an easily manageable bed, and liberal support from Government, the Corps of Engineers will fail to find the practical skill necessary to accomplish the object aimed at.

In carrying into effect any great public work, it is always expected that some existing interests will suffer. We have now shown that, in the case of the Ganges canal, this injury is the least possible, viewing matters at their worst; while, looking on them at their best, the anticipated injury may be the source of great ultimate benefit. The question is one of comparison; and when the advantages and disadvantages of the canal are fully contrasted, there can be but little, if any, hesitation in assigning an immense superiority to the former.

In a case like the present, where the argument is of necessity analogical, authority may be quoted with effect; and, when we find that all those officers, who have devoted their professional lives to the study of Indian Hydraulics, are unanimously in favour of the execution of the canal, we cannot but admit that Government has acted wisely and well in overruling the objections that have been advanced. The opinions of Colonels Colvin, Abbott, and Cautley, of Major Baker and others of more limited experience, who have carefully examined the question in all its bearings, have been recorded in advocacy of the project. There is no difference of opinion as to the influence of the canal on the navigation of the Ganges below Cawnpur. Above that point, the effect of the canal is variously estimated by different parties. What has already been stated will show that different estimates regarding this point are of very little importance.

The question has hitherto been regarded as between the river and the canal: but, to dispose of a second objection, we must as briefly as possible consider it as between the canal and the railway. The appropriation of resources to the construction of the canal, which for commercial purposes might have been so much better applied to promoting railways, has been condemned.

Had the alteration of the original design, directed by Lord Ellenborough, been carried into effect, and had the Ganges canal been made primarily a canal of navigation, the objection above stated would have been pertinent and irrefutable. To construct a canal for commercial purposes, when a railway is available, is wilfully to cast aside the improvements provided to our hands. It is to fall behind, not to keep pace with, the spirit of the times; to substitute for a first, a second rate means of commercial progress. But the Ganges canal is primarily an agricultural, not a commercial, work; and, in its first capacity, no development of the railway system can, in the slightest degree, replace its functions, or diminish its utility. The agriculture

of the North Western Provinces must continue to be dependent on irrigation, natural or artificial, however extensively the Iron ways may be spread over the land: and the agrestic population, the bulk of the community, can never derive from railways that immunity from famine, which the canal is calculated to secure for them. It is not by pouring the superabundant produce of more favoured localities into these provinces, that famine can be prevented. Even in the worst cases on record, there was no reason to suppose that food did not exist. It was the means of purchasing this food that were wanting, in consequence of the utter annihilation of the resources of the agricultural community. We may illustrate this by an example: our famines are analogous to that of Ireland: a failure of the periodic rains is to the inhabitant of these provinces what the Potato-disease was to the Irish; and, as in the latter case, an open seaboard and an unlimited freedom of importation would of themselves have done nothing to alleviate the distress experienced, so in the former the most perfect facility of transit would be found useless. In both instances money has to be supplied in exchange for that labour which is usually devoted to tillage; and public works, in too many instances most expensive and unprofitable, have to be carried on with the resources of the state. For a Government to undertake to find work and food for several millions of starving people is at all times an appalling, and never a perfectly successful, task. It is to obviate the necessity for this, in the populous provinces of the Doab, that the Grand canal is designed; and it will effect its object in the most natural and beneficial manner, by securing to the people the power of profitably employing their labour on their own lands, even should the rains from heaven fail them. In its peculiar and primary relations to agriculture, no railway can therefore ever become a substitute for the canal.

Navigation is a secondary object; and the proportion of the entire cost of the canal, which is applied to rendering it an easily navigable line, is very insignificant, not exceeding a twentieth part of the whole. We do not think therefore that to employ this small proportion of the estimated amount for commercial purposes can be deemed any misappropriation of our resources.

Navigable canals of irrigation and railways should never be exhibited as antagonistic works. They are not so in any way whatever. They occupy contiguous, but independent, provinces, linked together however in the most intimate relations of mutual support and aid. The one cannot attain its fullest development without the co-operation of the other.

and, although of the two the canal is certainly the more independent, yet its influence on the prosperity of the country would be greatly enhanced by the existence of its sister work.

To all interested in the progress of Indian railways the execution of the Ganges canal ought therefore to be an object of importance, since as long as the staple products of the land continue at the mercy of the seasons, so long must the returns from the rail participate in the like insecurity. In extreme cases, there would be no produce to transport, no means to purchase the goods the rail might bring, and no passengers to carry; and the income of the shareholders must of necessity cease for the time, to be recovered only after the long felt effects of such devastating visitations had passed away. The community of interests, and the proper relative positions of the canal and the railway may now, we hope, be understood, and the advocates of each may see that they may with propriety give hearty support to the other.

A third, and the last, objection, which has been made to the canal, is based on the supposed insalubrity of irrigation, as exemplified in parts of the existing canals of the Jumna. This question has received at the hands of the committee, appointed by Government for the special purpose of investigating it, an examination so careful and elaborate that we can have no difficulty in forming an opinion upon it.

The essence of the question appears to us to consist in determining whether, or not, there is in the use of canal irrigation "per se" any thing necessarily and essentially productive of sickness. If there is, then every village using canal water ought to exhibit proof of insalubrity, proportionate to the extent of its irrigation. If there is not, then the sickness, which has certainly been caused in parts of existing canals, must arise from other causes than the mere use of canal irrigation. To ascertain these causes, and, in the construction of a new canal, to avoid them, would admit of irrigation being employed without any consequent sickness.

Turning now to the mass of facts so laboriously collected by the committee, we find it established beyond the possibility of denial by numerous examples on the canals east and west of the Jumna, by the results of medical examinations in the irrigated districts of Ajmir and Inhairwara, and by a comparison of the general rates of sickness with the extent of irrigation, that insalubrity is not *of necessity* a consequence of the employment of canal water. This point being admitted, it remains to determine the causes of sickness on portions

of existing canals, and to ascertain whether these are irremediable.

The grand source of insalubrity on the Jumna canals was found to be imperfection of surface drainage, conjoined with stiff and retentive soil. We have already had occasion to state, that, in the construction of these canals, no attention was given to the maintenance of the natural drainage of the country. The system of our Mahommedan predecessors was in the first instance adopted without modification; and, as no complaints of this were made, it was many years before its imperfections forced themselves into notice. We now find that, in almost exact proportion to the degree in which existing canals interfere with free drainage, is the intensity with which sickness is developed; and that, as such drainage is maintained free and unimpeded, so does canal irrigation become less and less objectionable.

Now the Ganges canal has been projected with the fullest knowledge of the evils which have exhibited themselves on the canals of the Jumna, and every precaution, which extensive experience could suggest, for maintaining the drainage of the country in its natural state, and for improving it in localities where such state was imperfect, has been adopted. The precautions recommended by the committee are as follow.

1st. That the Ganges canal be kept as much as possible within soil; that is, that its ordinary surface level should be below that of the country.

2nd. That the earth, wanted to complete embankments, be never obtained from excavations made outside the canal, except in such localities as will readily admit of drainage.

3d. That the canal and its branches be taken as much as possible along the water shed line of the country, so as not to interfere with drainage; and in all cases, where such interference may be unavoidable, that the executive officers be instructed to provide otherwise for the drainage.

4th. That masonry drains be constructed under Rajbuhars, or bridge ramps, whenever these cross the drainage of the country.

5th. That no private water courses be allowed, but that irrigation be practised exclusively from Rajbuhars, or main water-courses.

6th. That irrigation be prohibited within five miles of a military station, and within one or two miles of large native towns.

7th. That in clearing embankments, the grass, weeds, &c. be not suffered to rot on the ground; but that they be burned as soon as possible after they are cut.

8th. That irrigation be prohibited altogether in localities, which appear naturally to possess a malarious character.

These precautions meet the chief difficulties of the case, and, in some particulars, are perhaps carried further than is absolutely necessary. This however, if it be an error, is a safe one, and can readily be corrected, should experience prove correction to be necessary.

Appendix E. to Colonel Cautley's second report on the Ganges canal is devoted to this same question of drainage, and the details of the system, whereby this officer proposes to combine general drainage with irrigation and navigation, are given at length. They are based on the established topographical features of the country, and must be efficient.

From the foregoing considerations it is therefore evident, that to conclude from the admitted sickness in parts of the districts under the influence of the Jumna canals, that like sickness must follow the opening of the Ganges canal, would be false reasoning. The circumstances of the two cases differ so very materially, that all analogy between them fails; and we feel justified in adopting the general conclusion arrived at by the Medical Committee, which cannot be better expressed than in their own words :

"In the course of our enquiries," they observe, "on existing canals, we have found salubrity to depend in a great measure on the nature of the soil, and the efficiency of the surface drainage. In the districts, which it is proposed to irrigate, the obvious geographical features of the country enable us to pronounce with some confidence, that an efficient drainage, if not everywhere existing, is at least generally attainable. On the proposed line of the canal from Roorkhí to Meerut, we observed the soil to be light and friable; but, without an extended examination, we cannot pronounce what proportion of the remaining districts of the Doab is characterized by similar soil. It can scarcely be hoped that, in the whole length of the canal, and its proposed branches, some localities will not be met with, naturally and irremediably unfavourable to irrigation, and in which disease, analogous to that found on the existing canals, may not be expected to develope itself. On the other hand, if attention to drainage be made an absolute condition of participation in the benefits of the canal, an improvement, rather than a deterioration, of the general salubrity may in many instances follow the introduction of canal irrigation. On the whole we consider ourselves warranted in anticipating on the Ganges canal a far less amount of contingent evil than has been experienced on those of the Jumna, which were

‘ originally constructed without reference to many important  
 ‘ points, which have been especially kept in view in projecting  
 ‘ the present work.”

By this summary, remembering the broad basis of facts on which it rests, we may consider the objection to the Ganges canal on sanitary grounds to be fairly disposed of: and we may add, that the opinions of the committee would certainly receive the cordial support of the agricultural population, who, except in seasons of epidemics, when bad localities on the canals are made much worse than usual, are found to show singularly little sympathy with our anxiety to secure the salubrity of their towns and villages. They remind one of the corporation of London, by their horror of sanitary regulations, and their respect for the vested rights of disease and filth. In the midst of all this however, we have the testimony of the committee, that during their researches, they observed no obvious bad effects on the adult population. “The men generally,” they remark, “look healthy, happy, and thriving;” and, on the Western Jumna canals, the villagers were found to be better clothed, better housed, and exhibiting greater appearances of wealth and comfort, than those not on the canals. It is only at the close of the rains that the people suffer; and it is only in some of the worst localities that the effects of their sufferings continue for any length of time. During the cold season there is no sickness attributable to the canals; and the whole canal districts then exhibit a scene of agricultural activity and prosperity of the most cheering kind. The following remark by Dr. Dempster will explain how it is that a considerable development of organic disease among the people is consistent with the physical condition above described. The test selected by this able officer to secure for the researches of the Committee a more satisfactory and certain basis than native oral testimony, was enlargement of the spleen, which is admitted by medical authorities to be a very constant, if not an invariable, sequela of malarious fever. Treating of the influence of this disease on the material condition of the people, Dr. Dempster remarks: “Enlargement of the spleen is the least formidable of all organic diseases of the viscera, and is chiefly important as the symbol of another complaint, which generally has preceded, and may come after it. The lesser varieties, *which also form the great mass of the cases registered*, may consist with every outward appearance of health and vigour. In most places where the disease is common, some strikingly healthy looking men and children were found with decided enlargement of the spleen. But the larger varieties, *of which but a comparatively*

*small number are recorded, were usually accompanied with a sickly (cachectic) aspect."*

That Government entertains a due sense of the responsibility, which the success of the canals, as financial measures, has laid it under, to remove as much as is now practicable the causes of sickness, is sufficiently evidenced by the liberal support it gives to all projects, which have for their objects the improvement of the drainage, or the distribution of the water in irrigated districts; and we have no doubt that the works already executed, and the still greater works yet to be executed, will in a few years lead to a manifest change for the better in even the worst of those localities, which now suffer from malarious influence.

It may be necessary, before leaving this question, to remove an erroneous impression regarding the medical committee's proceedings, which we have heard expressed more frequently than we should have thought possible. It has been matter of surprise to many that a medical committee should have systematically rejected the sick, who presented themselves for examination. A moment's consideration however of the committee's object will be sufficient to show, that, had they done otherwise, they must have vitiated their whole enquiry.

The object in view was to determine the relative salubrity of districts, irrigated from canals or wells, or not irrigated at all. The best way to have done this would of course have been to have examined, by means of some test applicable to all, the entire population of such districts. This however being under the circumstances of the case a physical impossibility, the next best course was to take a given number indiscriminately from each village as a sample of the population, and, by the results of the examination of these, to arrive at a fair approximation to the sanitary condition of the whole. Now had the sick, who offered themselves, been accepted, the sample would have been a false one; and the general conclusions must have been erroneous. As it was, individuals were selected from the mass without any knowledge being had of their actual condition. Volunteers were invariably rejected, and precautions were taken to insure the selection being a perfectly fair one, including without discrimination the sick and the healthy. The inferences of the committee may therefore be received with confidence, not as being rigidly exact, but sufficiently so for every practical purpose.

That the introduction of irrigation over more than half the superficial area of the Doab will produce material climatic

changes is to be expected, and to these the native population will be found, as under like circumstances elsewhere, to adapt themselves. What the precise nature and extent of these changes may be, we cannot "a priori" determine, from want of the requisite data, but their progress ought to be watched with care. To do this, the first requisite is to obtain an exact knowledge of the present state of the climate in the district, which it is proposed to irrigate; and with this view, the importance of having careful observations on the various climatic elements cannot be too earnestly urged. The Barometer, Thermometer, Hygrometer, and Rain-Gauge ought to be systematically observed, and data procured now, before the canal is opened, for comparison after irrigation has been developed. We fear that the Government does not properly appreciate the interest and importance of observations like these. It is however certain, that if the opportunity of instituting them is allowed to pass unimproved, it will be a subject of increasing regret to all who are interested in canals of irrigation, and of merited reproach to the Government, on whose attention the matter has been strongly pressed.

We have now examined and, we hope, satisfactorily disposed of, the only objections, which, to our knowledge, have been advanced against the project of the Ganges canal; and although the general question of the execution of this great work has already been decided by the Government, we have thought it right to discuss in considerable detail the grounds on which the resolution to proceed with the work has been founded. Few will take the trouble of reading, and fewer still of examining minutely, the elaborate but strictly professional reports of the projector and his associates. Many, we believe, would desire to have presented to them the essence of these reports, divested as much as possible of technicalities; and this it has been our endeavour to give. If, in some cases, we have strengthened convictions, or in others, removed doubts regarding the wisdom of carrying into effect this magnificent project, we shall have had our reward.

The task we had prescribed to ourselves is now completed. We have passed in review the entire system of irrigation in Northern India; a system, the importance and extent of which are appreciated within but a limited circle in this country, and not at all in England. The best statistical work in our language, McCulloch's Dictionary, full as it is to overflowing of details concerning the resources of almost every known land, dismisses the irrigation canals of these provinces in a few lines! Yet upon these works, when fully developed, will

depend the agricultural prosperity of more than twelve millions of men, public revenue to the extent of nearly three millions, and produce of not less annual value than ten millions sterling. It is a common "*façon de parler*" ill considered, however, and superficial, that, were we now to be driven from this country, we should leave behind us no record of our administration that would survive for a century. Yet five centuries were not sufficient to obliterate the canals of Feroze, and these, as compared to the works of the British Government, were limited in extent, temporary in construction, and feeble in their power of resistance to the destroying hand of time. Interwoven as canals of irrigation are with the natural habits and feelings of the people, conducing so directly as they do to the material prosperity of the land, we may feel assured that the intellect which designed, the liberality that supported, and the skill that executed so many of these works, will live long in the remembrance of a grateful people.

There are still many improvements to be effected ; improvements in internal administration, in works, and above all and before all, in the direct relations of the canals to the agricultural community, as connected with the systems of assessment and distribution of the waters. These, we hope and believe, are certain to be executed in course of time : but it is not without some feelings of despondency that we contemplate all that *might*, and all that ought to be done, and then reflect on the means whereby it is to be accomplished. "The harvest truly is plenteous, but the labourers are few"; and in this great want, the want of qualified men, we see the most serious obstacle to the complete development of the irrigation system of North Western India. Were such men available, there is not a stream now running waste through these provinces, which might not be made a source of wealth to the state, and of increased prosperity to the people. To no country in the world perhaps does the emphatic declaration of the famous Brindley, that "God meant rivers to feed canals," apply more emphatically, than to those fertile and populous plains, which stretch away southwards from the Himalayas, in irregular forms between the 70th and 84th parallels of longitude, and the 34th and 24th of latitude, and are traversed by the numerous rivers which flow from the great range. These rivers in the upper portions of their courses are commercially useless ; agriculturally they are, or with skill might be made, invaluable. It would be the truest economy on the part of Government to increase the number of officers, qualified for duties in the irrigation department, and to employ them in

bringing into use the whole of the available water, which Providence has so abundantly provided. It may perhaps be worth while to show very briefly what the loss to the state alone amounts to, from neglect of this source of revenue.

The total volume of water, which might be rendered available for irrigation within the British Provinces of Northern India, may be approximately estimated at 20,000 cubic feet per second. Now, of this quantity about one half is brought into beneficial employment by means of existing, or partially executed canals. There are therefore left about 10,000 cubic feet per second now running waste to the sea, useless equally to the Government and the people. As the annual discharge of each cubic foot of this volume is sufficient for the actual watering of 218 acres, the whole would suffice for a tract of country, containing 2,180,000 acres; and as the average water rent levied by Government amounts to Rs. 1 per acre, the revenue from this source alone would be Rs. 21,80,000, or £218,000 per annum. Further, as the surface actually watered in irrigating villages bears to the whole area the average proportion of 1 to 4, and as the increase of land revenue due to irrigation is calculated on the latter, we should have an enhancement of the income of the state over a surface of country amounting to 8,720,000 acres, or nearly 10,290 square miles. Now this enhancement, at a rate of Rs. 350 per square mile, which is below the average of existing canals, amounts to Rs. 36,01,500, or nearly £360,150. Hence therefore the total loss sustained by Government, from failing to make due use of the water provided to its hands, amounts to Rs. 57,81,000, or £578,150 per annum.

The means, necessary to secure this magnificent addition to the resources of the state, are an expenditure of a capital of about two millions sterling, and the necessary increase in the number of engineers available for duties of this class. The successful results of such measures are no matters of theory. We have given sufficient illustrations already of the returns from canals of irrigation to make it needless to dwell on the point now, and we accordingly leave our statements to work their own way.

At length we have done : and nothing remains for us but to wish all success to those, who are, or may be, employed in the delightful task of diffusing the means of fertility over the face of the land. With many of them our happiest thoughts and most pleasant memories are associated ; and, in the prospect of an early separation, and a doubtful reunion, we bid them all a hearty God speed in their work.

- ART. IV.—1. *The History of Ceylon, presented by Capt. John Rebeyro to the King of Portugal in 1685 ; with an Appendix, containing chapters illustrative of the past and present condition of the Island, by George Lee, Postmaster General of Ceylon.*
2. *Papers relative to the affairs of Ceylon, presented to Parliament, February, 1819.*

IF we form our opinions as to Ceylon from the books of our Sanskrit sages, we must believe that the people there are a race of giants. If, on the other hand, we trust to the newspaper press of the island itself, we cannot escape the conviction that they are pigmies—Lord Torrington being their obnoxious Emperor, and Sir J. E. Tennent his Prime Minister. The *Ceylon Observer* proclaims that the Government does nothing right; the *Ceylon Times* that it does nothing wrong; while the more quiet *Ceylon Examiner* contents itself with discussions on political economy and literature, too high, we should think, to be very profitable in Colombo. Thus between the three every thing falls to the ground, except the bad feelings which they kindle and keep alive, and the bewilderment into which they throw those at a distance, who, like ourselves, desire only to discover the truth, and to do justice to all.

But if we turn to more intelligent and more intelligible sources of information, such as those which head this article, and put to ourselves the question, What is really doing in Ceylon? we obtain a very different result. We find that a grand experiment has been made, and is now progressing in that country, which may ultimately affect the destiny of all India; and, even as to Lord Torrington's Government, we cannot help thinking, that it is very far from deserving that obloquy, which has been so recklessly cast upon it by its local assailants.

The grand experiment, to which we have alluded, is nothing less than the endeavour to superinduce, in so far as Ceylon is concerned, the progressive spirit of the West upon the immobility of the East; in a word, to substitute the European type of civilization for that of Asia. This experiment, which may be said to have been begun from the first year of this century, when, by the 5th article of the treaty of Amiens, the Batavian republic made the cession of Ceylon to the British absolute, has been progressing all along with more or less prudence and success, although sometimes precipitated in a way which the chemistry of nations forbids, more especially by the changes

ordered in consequence of the report of Commissioner Colebrooke in 1832, and the coffee mania of the last ten years. Hence an explosion in the Kandian country in the August of last year; and hence financial difficulties to Government of far more consideration.

The universal enthusiasm, which attached to the planting of coffee ten years ago, unhappily extended to those who principally assisted at the movements of Government. In common with all others, who had the command of any capital, the Government servants entered personally into the speculation; and, carrying their bright hopes, as coffee planters, into the Treasury offices and executive Council, they concluded that a public revenue of almost indefinite amount might be counted upon for all time coming. The expenditure of Government was therefore fearlessly increased. The fixed establishments of the colony received a permanent addition, which, in 1848, amounted to £17,545 annually above what it was in 1840; and, with every thing looking bright, with a surplus revenue, appearing in the present, and presumed on for the future, things were put into such efficient train for emptying the Treasury, that, in 1847, the expenditure of the Government reached the figure of £518,987, while the largest income realized in any one year, the surplus of former years included, never exceeded £154,116. Of this last sum, moreover, the odd thousands (in a general view) were nothing better than Government notes in circulation, and payable on demand, but which it had been the strange fashion of the Ceylon treasury to estimate as revenue; so that the most prosperous condition of the revenue of Ceylon may be taken at £100,000,\* while its liabilities in one year, amounted to £519,000; and, what was still more sad, the year of greatest liabilities lagged behind that of greatest prosperity; for it was 1845, which gave the maximum revenue, and 1847, which demanded the maximum outlay.

But why this unlooked for disaster? Because the coffee bushes on too many estates, on which too many thousands had been already spent, were found to be dying; and the thoughtless planters were obliged to look to their lands, and consider whether a soil, composed of grains of quartz, and scales of mica, at a stove heat, and swarming with vermin, were fit for growing coffee. The ultimate result however is, that things are com-

\* The number 400,000 may be taken as a Memoric number for Ceylon statistics. Thus it represents in a general way,

1. The Island revenue in pounds sterling.
2. The value in grain, which it imports, also in pounds sterling.
3. The Coffee, which it may be expected next year to export, in cwts.
4. The Cinnamon, which it can export annually, in lbs.

ing right now. The coffee culture will stand, and be a good thing for those who begun economically in a good soil and climate, and a still better for those who have purchased estates cheap from the first class of speculators. Still, however, (let it be confessed) the prospect of coffee-planting is not now what it once was.

But while all was progressing, and all anticipated large fortunes, these originals of planters who, it must be acknowledged, have "gathered of all kinds," were careering over the Kandian country, in a way which, however much it was fun to them, was worse than death to the Kandians—and, let us add, to their cattle also, which used to roam over the forest at large, constituting the wealth of their masters, and, to say the truth, society for them also, far more congenial than these rough-shod planters in their leech-gaiters, with their accompanying gangs of much-detested Pariah Malabars. The social organisation of the Kandian country, such as it had previously been, became rapidly broken up. The Kandians grew discontented to the last degree; and ultimately, excited on the one hand by the earnest desire of the home Government to detach the local Government from all official participation in the Kandian heathenism, and on the other by the apprehension of a multitude of new taxes, which were never dreamt of, they gathered together, bent upon recalling pretenders to the ancient kingdom of Kandy. Both puppets and princes appeared; and, in a word, the Cinnamon Isle had the glory, during the eventful year 1848, of sharing in the political strife which then agitated all Europe.

And here, though but glancing now at the causes of the Kandian rebellion, let us not fail to mention another cause. It is what the priests alleged to the people, equally when they were urging them on, or consoling them under reverses and fainting hopes. "On last New year's day (April 11, 1847), the princely Vishnu (said they) descended from the throne, and gave the reins of Providence into the hands of the destroying Iswara, and, for twenty years to come, you are to look for nothing but the degradation of your holy religion. Has it not already begun? Henceforth, however, princes are no longer to career over the people, as they have been doing for the last twenty years, when Vishnu, the Protector of princes, ordered all things for their benefit. The people must now rise. So says the sacred Book. Do you not feel something working within you? It is the God, urging you to rise." And so they did. They rose, dark, dreaming, creatures! They rose; and, thousands having gathered at Matelle, and Dambúl, and Kornegalle, and all their ancient seats of Royalty and of superstition, they appeared in arms against the troops of the Queen of

England! The prospect was fearful: for, previously to the British occupation, the Kandians were an eminently cruel people; not even to the English had they shown any mercy, as the melancholy events of the year 1803 attest, when they massacred our sick in the hospitals, and shot our disarmed soldiers in couples. And therefore it was not without good grounds, that the Europeans, in Kandy and the central province generally, looked with horror at the idea of the natives getting the upper hand, and not without sound policy, that Lord Torrington took the most vigorous measures to suppress the rebellion.

But did the Kandians manifest any barbarity on this occasion? On the contrary, not one European lost his life at their hands. Nay, their forbearance, even to those whom they had altogether in their power, was most remarkable, although their prisoners were the very parties, whose planting operations had so much annoyed them. In fact, contrary to all the hopes which could have been safely counted upon, the evidence goes all to show, that the Kandians are now changed into a gentle and timid people—foolishly gentle indeed, if they are to assume the attitude of rebels at all. Now what could be the cause of a change so notable, and so unexpectedly benignant? This question brings us back to our starting place; and, having introduced our subject by this general sketch, let us now enter upon it with somewhat of scientific detail.

Ceylon, as we have said, ever since the beginning of the present century, has been the theatre of a grand experiment, having for its object to solve the question, Whether the type of Asiatic civilization can be made to give place to the European? That the types are very different, is obvious enough to any one who has visited this country, and especially to him who has visited Ceylon. The man, who looks upon the natives with his European eyes, is apt to go so far wrong as even to mistake the men for the women. The men in Ceylon wear long hair, gathered together behind by a high tortoise-shell comb, and kept braided back in front by a crescent shaped comb of the same material. Their necks, shoulders, and breasts (which are often strangely mammiferous in appearance) are usually bare; while they inclose the lower part of the body in a petticoat, wrapt so tight round the figure, that a manly gait is impossible, and the dandies among them mince it, as they go, with little steps, like the veriest coquettes. Moreover this difference, which appears in dress, appears in every thing. The types of Asiatic and of European civilization are eminently different. Now, though it be most true, as Sir Joshua Reynolds some where says, that, as to costume, it is hard to say whether

that of the gentleman of Europe, or of the Cherokee Indian, be farthest from a true propriety and fitness; and that, as to this matter, all nations had best be left to please themselves, provided only that the fashions be not very unhealthy, or very painful, as for instance tight-lacing and tattooing in European ladies and New Zealand chiefs; yet, looking to the question in a higher point of view, few things can be conceived as more desirable than the substitution of the active progressive type of European civilization, for the immobility and deadness of that of the East. Few thoughts can be more distressing to a truly philanthropic mind, than to be obliged to believe that the Eastern Asiatics are to be left for ever in the state in which they are now—in a society, composed of a frigid mixture of castes, with no signs of emotive life at all, but that which is awoken by the practice of haggard, soul-destroying superstitions.

Now this grand question has never yet been solved, nor can it be solved in a satisfactory manner by mere speculation. It has indeed been proved, that the Asiatics cannot emancipate themselves. It has been proved, that they have reached a certain condition of civilization, beyond which they cannot pass by any internal energy of their own. Custom, which is a second nature even to a Saxon, has somehow come to be to an Asiatic all the nature that he has; and it may be set down for certain that, if the Eastern nations are ever to get out of that habit, which they all have fallen into, of ever looking to the past, and living in it, as the only golden age for their country—the time when the beau-ideal of truth, religion, and government realized itself—the escape from this must be effected for them, not by them. But whether the thing be practicable on the great scale, by ordinary human agency, has not yet been ascertained, nor can it be ascertained, by mere cogitation. Very cogent trains of reasoning by different thinkers have given conflicting conclusions. There is, therefore, no satisfactory way of solving it, but by trying it in some suitable portion of the field. Now this is what the British Government has been doing in Ceylon, ever since it got possession of the island; and surely a noble enterprize it is, every movement and result of which is deeply interesting to the philanthropist, wherever his dwelling place on the surface of our planet may be, and specially interesting to us in India.

What the ultimate result will be, cannot as yet be foretold. If the rebellion, which has been referred to, shows that risks must be encountered in carrying it on, it shows also a most encouraging moral change in the character of the people, since they rebelled before. If they have suffered in 1848 on the supposition that

they were still the dangerous and cruel race that they were in 1803, this is no doubt a misfortune. But it could neither be prevented, nor foreseen; and the discovery of their unlooked for timidity, and respect for Englishmen, will redound to their advantage every way in the future. Much light will be thrown on the whole question, by the reception and working of Lord Torrington's Road-making Ordinance, now in the course of being introduced to the natives; which, far from being a mere tax, magisterially laid upon the whole population solely with a view to revenue, as it has been represented, is, on the contrary, a very sagaciously devised scheme for developing the social system among the natives themselves, and calling upon them in an eminent degree to exercise their own wills; for, to do this in an energetic manner, is all that they want in order to become active and enlightened men, and good subjects of the Queen of England. The Asiatic mind, even as it is found in the women-like men of Ceylon, is far from being defective in dialectic power. Never in the masses indeed does this reach the dignity of reason; but it falls short only through the weakness of the power of volition, which is at once the life of the soul, and the principle, which is, in a word, the man himself. Take away the individual will, and there remains only the *caput mortuum* of human nature—an imitating, self-repeating thing, a creature of mere custom, whose wants, as an animal alone, serve to keep him alive.

Now this, to a most distressing extent, was the condition to which the Singhalese had fallen, when the British found them. The despotism of their own emperors and kings, and the tyranny still more absolute of the headmen, whom they appointed to rule them, tended wholly to crush the spirit of the people. The Portuguese sought only to astonish them with Catholic grandeur, to flatter, and to please them; and the Dutch, while their main object was to grind money out of them, conducted their Government (and even their most laudable attempts at conversion to Protestant Christianity) in such an absolute way, that the native will was suppressed under our immediate predecessors, even more than it ever had been under their native princes; so that, as we found them, when we acquired the island, the Singhalese had become a most abject, suspicious, and deceitful race, ready to profess any faith, or to occupy any position, which would save their interests, or serve their turn; and, above all things, never daring for a single moment to entertain such a notion, as that they were fellow-subjects of the same prince with those who ruled them.

Such was the inheritance to which Great Britain succeeded in 1796, when she got possession of the maritime provinces of Ceylon. But it was obviously impossible that a British Government could tolerate such a state of things in what was to be ranked as one of her colonies. In a word, as soon as Ceylon was included in the category of a British colony, the colonial system of England was extended to it, including of course the review of all local legislation at Westminster ; and consequently there was established from that date a security for every man, whatever his creed, colour, or language, whom the Queen of England acknowledged as her subject, that he should have all his rights and privileges as such, as soon as he was in a condition to use, or even to appreciate them. Such is the glorious principle of English colonization. But here truth obliges us to confess that, in so far as Ceylon was concerned, the maintenance of the principle was for a long time the best of the result. When proceeding to apply the principles of western civilization, and of the constitution of England to the natives of Ceylon, their abject state, and their pre-possession in favour of another order of things altogether different, were not duly considered. And still worse, the distressing fact was forgotten, that the natives then looked upon the British, as indeed they still do, exactly as they looked upon the Dutch, that is, merely as masters, holding their country by force of conquest, and for the purpose of taking money away from them.

Still, however, even so early as the year 1811, trial by jury was established, and has continued ever since ; and doubtless this was a noble offering of confidence to the natives, and might have been expected to win them over, if anything would. In point of fact however it has been but indifferently appreciated ; and, if it had to be done again, and either "the Governor in Council" or "the collective Supreme Court" were asked for an opinion as to its expediency, we rather think even now, that both would agree in saying, "Wait a while." The melancholy fact is that, among the Singhalese as they actually stand at this day, it is only when veracity concurs with interest (interest estimated on the coarsest principles) that the truth is to be looked for from any Singhalese man on his oath. Add to this, that their point of honour is ever-more to refuse to report to Government any delinquency in one of themselves, however flagrant,—and it will be easy to see that courts of law, framed after the model of those of England, must work very badly in Ceylon. But we have not told the worst ; and we must here let out a secret. There is (in fact especially for the

purpose of frustrating the course of justice) in every considerable Singhalese village a class of persons, who style themselves "Rural Proctors," whose self-taught education consists in hanging about the courts, and learning by observation there the course which trials take, with a view to discover the management which secures the escape of the guilty, and the success of the unjust; this being mastered, they set up in their villages, their profession being to shape the case for any one, who has been caught in a crime, or is bent on attempting one under the cover of the law, which is a favorite form of revenge among the Singhalese. As the complement of this system, there is also in every considerable village a supply of false witnesses (familiarily known among their countrymen by the name of the Demon, who is believed by them to watch by a dying man to carry off his soul), and these false witnesses will swear to anything that is feasible for a rupee or two; and now indeed, that prices are falling, for much less money. It is needless to say after this that trial by jury in Ceylon necessarily failed in its object. It is also a serious thought that it failed in that collateral benefit, which it brings so largely along with it in England;—namely, the intellectual development of the common people, and the training of them to conceptions of equity. The Singhalese have quite lost sight of this long ago. With them the root of equity has long ago run to seed; and all that remains is casuistry. Of this they sometimes give fine displays. Thus a high caste headman was being tried the other day by the court, when the interpreter (who was a person of inferior caste,) in putting a question to him from the judge, addressed him without the honorifics, to which he was entitled. The headman immediately complained; but, before the complaint reached the bench, the interpreter with admirable casuistry answered, "You ought to consider that at present my mouth is the mouth of the court, and that I must address you as if I were the judge." The great evil of the establishment of the English judicial system lay in this, that it went to feed this quibbling and litigious, or (to give it a better name) this dialectic disposition, in which the Orientals are quite at home from time immemorial; and that it did nothing to develop their wills, in the want of which their main weakness, as compared with Europeans, consists. Upon the whole it fully appears, that the establishment of trial by jury was an unseasonable, if not an altogether unfit, step in the grand experiment; and it is to be desired that those, whose philanthropy leads them to propose such bold measures, should have a higher order of intelligence than Sir Alexander Johnstone. Trial by jury has not however been altogether without good fruits. Thus

the jury ordinance (which however dates from the time of the present chief justice Sir A. Oliphant, and not from that of the original institution) takes no cognizance of caste, but only of language. It has in this way done a great deal to break down the prejudices of caste; and so well does it seem to have worked, notwithstanding its apparent boldness, that it is said that the Singhalese, in their own village councils, have adopted this fusion of castes and elect their arbitrators from all the castes of the district, who sit together without objection.

Another movement of the British Government, of still greater moment than the judicial establishment, was an order of the Queen in Council in 1832, in which it is declared and ordered, "That none of Her Majesty's native, or Indian, subjects within this island (Ceylon) shall be, or are, liable to render any service in respect of the tenure of their land, or in respect of their caste, or otherwise, to which Her Majesty's subjects of European birth, or descent, are not liable; any law, custom, or regulation, to the contrary notwithstanding." This was in other words, the abolition of the *Raja Karia* (king's service) or forced labour system. Previously to that date, an iron-handed feudalism prevailed; in virtue of which the people were subject to be called upon, by the Government headmen, to execute whatever works Government took in hand. And doubtless it was a noble step to emancipate them from such a thralldom; and a noble result of their privileges as subjects of England. It is much to be regretted however (as the Secretary of State for the time remarked, three years after, in a *déspatch* to Sir R. Horton, then Governor of Ceylon) that in setting the masses free from this bondage, the effects of the change upon the future progress, or rather possibility, of public works, and yet more upon the status of the headmen, had not been more maturely considered. Singhalese people in general will never work, if they can help it. All nature invites them to vegetate. And as long as every family lives in its own garden, or in a garden free from rent, as is generally the case now, all the members of it will rather share in common, and content themselves with the husks which the swine do eat, than stir from home, or even stir at home, to grow better food. Wretched indeed is the diet on which the masses of the country people subsist. Various sorts of young cocoanuts, jack fruits, cucumbers, and jungle leaves, with condiments, constitute the usual ingredients of their ~~curses~~ <sup>curries</sup>. Rice falls rarely to the lot of the poorer classes; fish very seldom; and flesh next to never. Hence arise great feebleness of frame, and a constitution which succumbs under the first invasion of disease: though it may be also remarked that, in consequence of the carbonaceous nature of their diet, corpor-

lency is not uncommon, and now and then a very strong man is to be seen. Only a very small portion of the labour of Ceylon is performed by Singhalese. They have not an adequate motive to bestir themselves in working. Nirvana, or extinction, is the highest prospect which they promise to themselves in heaven, and sleep is their highest standard of enjoyment upon earth. Sleep is also the practice of their religion: for they have no God; to attain Nirvana is every thing, and sleep goes far to commence it. It was therefore a pity to relieve them from the Rajakaria, without opening to them, at the same time, some definite way of bestirring themselves voluntarily, in obedience to those habits of activity, which had been fixed upon them. How easy and beneficial would it have been at that time to have introduced the road ordinance, which, with all the privileges it confers, they are now so disinclined to accept! The opportunity was lost however; and we need say no more about it.

But still more serious, in its consequences to the administration of the Government, was the abolition of forced labour in its bearings upon the characters of the head men. During the existence of that system, they derived their emoluments by taking bribes from parties, whom they called out to work, and then let off, in consideration of what they gave them—a way of raising the wind, which, though dishonest and unlawful, had yet a sort of equity in it behind the scenes. But now there is scarcely any way in which the head men can make money, but by the disposal of their patronage (for generally speaking they still continue to nominate all the petty head men); whence it comes to pass, that the latter, having emptied their pockets to buy their places, must lose no time, as soon as they get into office, to replenish them again; for which, indeed, a fine field is open to them, as they constitute the rural police, and can always depend on a goodly proportion of presents from all gamblers, thieves, and robbers, who have any discretion. Thus we have a system, which not only saps all possible morality among the Singhalese people, and which utterly frustrates all missionary and educational enterprise, but which throws the headmen into necessary opposition to every Englishman,—the worst of whom has never yet been known to go along with the natives in such villainy. Hence, on the part of the head men, conscious guilt, suspicion, cunning, and a readiness for every evil course that they have strength for. Hence their fitness for a rebellion, and the possibility of planning one all over the country, headed by outlaws and robbers, as is well known to have been the case in the late rising in Kandy. On the abolition of the Rajakaria, care should have been taken to increase the salaries of

the head men, and to confer new honours upon them, in consideration of their having been head men at so glorious an epoch, as the emancipation of their countrymen from serfdom. At the same time, all that was practicable should have been done to educate their sons, and to train them to principles of equity and humanity, and, as far as possible, to instil into their minds the principles of our holy religion; which being once secured in the heart, every thing is secured, that a good Government and a happy people can desire; and in order to which, it is pleasing to find, that there are not in Ceylon the same difficulties to be contended with, that there are in this country, as may be seen more fully by reference to our 10th number, in which an account is given of the educational system of Ceylon. Not that every thing can be safely intrusted to head men, however satisfactory their characters. Such a form of Government is wholly incompatible with the European type. Still it needs but a slender knowledge of the East to know that this system must not be lightly interfered with. It is pleasing to learn, in reference to Ceylon, however, that since the abolition of serfdom there has been gradually arising what may be called a native public. Enterprising individuals have appeared in the field, who, by their agricultural, commercial, or manufacturing ability, have risen to wealth, all independent of Government patronage. The villagers generally also are becoming more happy, and beginning to feel that they have rights; and thus a generally diffused check to the operations of the head men is beginning to make its apparition in every village, and the wiser among the head men are beginning to be somewhat circumspect. It is now the moment for Government to do something; and a long letter on this subject from Sir J. Emerson Tennent to Lord Torrington, of the greatest value, is to be found in the Ceylon published Papers at p. 160. But the profound ignorance, on the part of the Civil Servants generally, of the native language, (a fact existing in the face of the most explicit injunctions from the Secretary of State given again and again,) places them wholly at the mercy of the head men whom they have about them, and renders every change unsafe, and all real progress impossible.

After the establishment of the judicial system, and the abolition of forced labour, there is no event which has exercised so important an influence upon Ceylon as the Coffee mania. In virtue of this great movement, the mountain Singhalese, or Kandians, came prominently under the eye of Government, which had previously shaped its legislation chiefly for the low country, or maritime, Singhalese. Now, between these two tribes there is a great difference, depending not only on the physical conditions of climate, &c., but also on their respective histories. The maritime

Singhalese are in a high degree a plastic people, of eminently gentle dispositions; and, though they cannot originate anything, they are very apt in imitating. In consequence of this they have amongst them many valuable arts; but all of them, without exception, they appear to have learned from their successive masters, Tamuls, Portugese, Dutch, and English. The mountain Singhalese, on the other hand, are far from being the same modifiable sort of beings. They are inferior in the use of their reasoning powers, and are less reflectively disposed: but they are more passionate and firm in their hereditary habits and attachments. Both live in the past, and consider the state of things, when their sacred books were composed, as the golden age and beau-ideal of social, as well as of religious, order; but the low country Singhalese live more in the world than the Kandians, and are every way far more practicable subjects for an enlightened Government to deal with. They are wholly disposed to be good subjects, and to move along with the Government; and this might be at once secured, if the Government agents, or collectors, would but move about amongst them, and make themselves accessible to the better classes of natives, otherwise than through their much detested head men as interpreters; who, in addressing their inferiors in caste or rank, still attempt to keep up the disgusting refusal of respectful terms to common people, as used to be the case in the days of their utmost serfdom and degradation. Nothing can be farther from a Singhalese man's mind, than to think of a public meeting for the recall of a governor, or even for the repeal of a tax. The day for such things may possibly be coming in the East, as it has come in the West; but it is far distant now. We do indeed hear of such things even in the present day; but it is all stuffed into them by a set of men, who, for the sake of revenge, are going directly in the teeth of their own principles, and, professing to be friends of the Singhalese, are raging at Government like furies—though Government has done nothing worse than to have made a new and well considered attempt to rouse this dormant people, for their own good, from their rememorial slumbers.

But to return to the Coffee mania. We cannot change the name, though the reader may not approve of it: for a mania is truly was. Only fancy, sea captains, London-bred merchants, and younger sons, in short, speculators of all sorts, all most innocent of the veriest rudiments of agriculture, leaving their decks, their desks, and their drawing-rooms, to plant (for themselves, or those whom they represented) Coffee estates in the Kandy country of Ceylon! No doubt, they had before them the example of the civil and military servants in the island, who began the specula-

tion, whom it might seem safe to follow; and who, to tell the truth, have much to answer for, as well as the Government that sanctioned their rashness. But that was all their fitness, and all their guidance: yet they rushed into the jungle, and, that in such style, that they never drew breath, nor looked behind them, until they had purchased from Government 300,000 acres of forest land, the great bulk of it destined for growing Coffee, and even now, cultivated to such an extent, that the Coffee expected from Ceylon is more than equal to the entire consumption of the British Isles! Now to realize such an enterprize as was projected, millions of sterling money would be required; and in point of fact, for several years, money flowed in abundantly; and not money only, but Europeans bent on spending it in Ceylon. Every ship that reached the roads in Colombo, every Steamer at Point de Galle, gave a long list of new arrivals, every one gay, and flush of cash, or ready with his signature, which was then quite as good. Soon there was nothing but felling and burning of forests on every mountain; and then there was the planting out of the little hopeful nurslings; and, in due time, there was the beautiful white Coffee blossom, sprinkling the new cut hill side as with fragrant snow; and then there was the happy superintendent, with his boasted salary of hundreds, and plenty of good cheer in his bungalow, slapping his lank coolies half in fun, and singing out, through his cigar-retaining teeth, "surka, surka," being his whole vocabulary of their language as yet.

And now the berry is ripe; and there is the gathering; and there is the grating off the pulp; and the washing off the gratings; and there is the drying of the bean in the parchement; and then there is the storing; and the bandy getting; and the sending off to Colombo; and then there is the peeling, and the picking there; and then there is the shipping; and then in good course, there is the selling in London. All is right. All is life. The only cry is, "Let us fell, and plant more." The work proceeds. Labour is in great demand. Coal-black coolies, with their long staves, and spindle-shanks, gang after gang, are footing it from the far away country of the Malabars, leaving behind them by the long road side what is seen by them, on their return home, (for they soon weary of Ceylon) as a rain-bleached skeleton, grinning at the sun. Meanwhile, the more cautious Singhalese man is stealing up, by some well known jungle path, with his axe over his shoulder. The Moorman mason keeps to the road; while the Portuguese fellow tries to get a cast in the coach: for there are now two coaches between Colombo and Kandy every day. Long trains of covered carts, or bandies, are seen wending

round the shoulder of the mountain on the Kan<sup>du</sup> road—the bandymen roaring to their bullocks, so as to match Cerberus himself, and in fact every way as bad as that dog. They are a horrid set, these bandymen. Meanwhile the little bullocks pull, and pull, the yoke resting on their necks, before the hump, which buffs it well; and up go the rice, and the fish, and the arrack, and the implements; and down comes the Coffee bag; and all is life and hope, and hope again, in a fair day till evening. Infinite spirit do the planters display. They stick at no expense—at nothing.

But what is Government doing meanwhile? Why, what better could Government wish for? But plainly it must not merely look on. The sales of land, the importation of stores to maintain such a prodigious increase of population, and of implements of all kinds, necessary to a large planting and thriving community, as well as the liberal consumption of excisable commodities on the spot, gave such a flourish to the revenue, that from £331,200, which was its amount in 1840, it was found in 1845 to have reached the figure of £451,146; and that without any pearl fishery at all, and less than usual from cinnamon. Now all this is most pleasing, nay, spirit-stirring: and accordingly, even the despatch of a Secretary of State grows spontaneously eloquent. “The great importance of that possession (says Earl Grey, writing of Ceylon,) the amplitude and variety of its native resources; the field it has opened to European capital and enterprise: its geographical position, as the key of the Indian Ocean, and the great insular outpost of the British Empire in the East; its salubrious climate; its unrivalled harbour, pointing it out as the great reserve station of our military and naval forces in that quarter of the globe; all these are considerations, &c.” Thus it went; and plainly the local Government, in receiving such despatches and such increase of revenue, and having to preside over an island, in such a state as Ceylon then was, incurred new responsibilities, and came under new obligations. To do justice to the manifold applications for land, the survey department needed to be put on a more efficient and expensive scale. To make the land, which was bought, of any use to the purchasers (the major part of whom paid £1 per acre for it) a net work of roads, all over the mountains, must be constructed; and a road department of great efficiency must be added to the Government departments. Moreover, the great increase in property, and its transfer, and the influx of a new population, gave rise to endless calls for the aid of the law; and thus the judicial establishment must be increased. But all this added immensely to the work of the civil depart-

ment of the Government ; so this needed also to be reinforced. Nor was this all. The sudden influx of new comers, bringing neither houses, furniture, nor food, but only plenty of money with them—yet wanting all these things, and ready to pay whatever might be demanded for them—so raised rents, and the cost of living generally, that the old stagers, and the military, could no longer live upon their pay, as they had been accustomed to do. A sudden depreciation had in fact taken place in the value of the circulating medium ; and a general rise in all salaries indiscriminately was called for, to make them to be worth what they were before. And thus it came to pass, one way with another, that the expenditure of the island, which in 1844, the year of greatest promise, was only £374,576, mounted up ; so that Lord Torrington, on his arrival, found it in a fair way for reaching in 1847, (as it actually did) the sum of £518,987, leaving at the year's end an absolute deficiency of £26,000—and that, after the last drops of a boasted surplus, the accumulation of former years, had been drained !

It was understood by every body here, and in England, and doubtless by Lord Torrington himself among the foremost, that he was coming to govern a prosperous colony, with a prosperous revenue, and a large surplus of hard cash in the Treasury. But the tide had turned ; and so rapidly did it ebb, that the coffers could not bear to be looked into, long before the end of the year in which he arrived. Nor could either he, or Sir J. Emerson Tennent, or all his Council, even though they had been true magi, have stemmed the outward-bound current of cash. It was easy for the planters to stop spending money, when they had no more to spend ; and for English merchants to stop sending goods to Ceylon, when they found themselves realizing a dead loss. But a Government cannot change its ways so easily. The people it has bred, or made a nest for, insist on being fed. What, though they know that their mother's breasts have gone dry ? they cannot starve 12,000 miles from home.

But supposing that there had been permanent funds to meet the new expenditure, as was fondly and foolishly hoped for by the Coffee planting council of Sir Colin Campbell, was the outlay judicious ? or was there, as there is always reason to apprehend, much jobbing on the occasion ? This is a fair question. In answer, it fully appears from the published accounts, that though, during the interval between 1840 and 1848, the annual ordinary expenditure was augmented by a sum no less than that which has been stated, and though there was sometimes a contingent outlay for public works, &c., amounting to £100,000, still nothing appears, which will bear the construction of obvious jobbing

by those who were on the spot, and in possession. There is, on the contrary, a *bonâ fide* enlargement of Government men and Government work, proportional to the increase of outlay. In some of the more exalted walks of improvement, indeed, some public servants seem to have been appointed by anticipation. Thus in 1844, Lord Stanley, then Secretary of State, sent a Bishop to the folks of Ceylon on an income of £2,500; though there is certainly a want of evidence even to the present day, that such a dignity was either wanted, or could be turned to much use there. Mr. Anstruther, the Colonial Secretary, who immediately preceded Sir J. Emerson Tennent, although he must surely have borne a hand in forwarding the enlargement, has, since his return to Europe, given it as his opinion, that the Government of Ceylon might be better conducted on one-half of its present cost. And it may no doubt be well argued, that a few first-rate men would be better than ten times the number of bad ones. But a certain system had been adopted, ever since the Civil Service of Ceylon (unhappily for itself) was broken off from that of India: and Sir Colin Campbell was too old a soldier to recommend any organic change in his day.

Happily for the confusion into which things had fallen, however, sometime before Sir Colin returned home, Sir J. E. Tennent arrived as Colonial Secretary: and he, seeing that things could not possibly be allowed to go on longer as they had been going, began forthwith to apply his well known talents to the revision and reform of the entire commercial system of the island—which, notwithstanding great steps made in a right direction, especially by Mr. Anstruther, who possessed enlightened views in political economy, still bore too many marks of the Dutch Factory system, in which it originated. The result was an elaborate report by Sir Emerson, setting forth the entire commercial policy of the island, with his own plans for opening and improving it: and this, having been considered by a Committee appointed by the Secretary of State, was productive of another report by them; and thus the ground was laid for the policy, which was dictated to Lord Torrington, when he took the reins in hand.

And here, whether we look to Sir Emerson's report, to that of the Committee, to Earl Grey's instructions in connection with them, or to Lord Torrington's Government, we see a fixed determination towards the steady pursuit of the grand experiment of forwarding, if possible, the European type of civilization in Ceylon, and giving the Singhalese a fair chance to become a free, industrious, and progressive, people, like those of the West—if only they have it in them. For proof of this the entire Blue Book, published by command of Parliament, may be consulted, and,

especially Earl Grey's despatch, of Oct. 24, 1848, consisting of four folio pages, and Lord Torrington's, of May 6th, 1848, of six pages. We should have been happy to have quoted from them, but we refrain, feeling that to have abridged them would be to do them injustice. Suffice it to say, that their general principle is, that the taxes must be so levied, as not to oppress industry, and dissuade from it; but on the contrary, so as (if possible) to develop the activity of the people, to interest them in their own affairs, and to raise their standard of enjoyment.

But while such plans were being formed in reference to the affairs of *this* world in Ceylon, Her Majesty's Government had resolved, that the connection, which had hitherto subsisted between the British Government and the religion of Budha, at once atheistical and idolatrous, should altogether cease; that the Government should no longer appoint Buddhist priests to Buddhist temples; and that the Government agent of Kandy should no longer be the custodier of the Dalada, or sacred Tooth. In a word, it was resolved to require of the Buddhists to manage their own affairs, for which every facility would be afforded them, and full protection in the exercise of their religion; while they should retire with the whole of their property, and with every immunity, except the participation of Government.

But this was what the Kandian chiefs and priests were by no means disposed to accede to voluntarily, on any terms that could be proposed, or suggested. The State connection of their church appeared now to be every thing in their eyes. And, as they knew that it could not be broken, without a violation of the Kandian convention (according to their understanding of it at least), they were very difficult to deal with: believing in all probability, that if they were firm and successful in starting objections to all possible plans that were proposed to them, the connection would not be broken at all. There were positive instructions from Downing Street, however, to the effect, that that unholy alliance should forthwith terminate, as certainly it ought, whatever the cost in worldly advantage to England. The dissolution was accordingly announced, to the great annoyance of both priests and Kandian chiefs. The Dalada was committed to their own keeping, where it ought always to have been; and thus matters remained until the late rebellion, when it was unhappily resumed—not however as a symbol of rebellion, or a trophy of war, in which case all would have been right, but for its safe custody! And thus, this most difficult question is thrown as far back as ever; and it is very hard to say, what ought to be done. There should certainly be a right understanding, and an honorable observance

At the Kandian convention, on the part of England—and therefore the consent of those who were parties to it, or of those who now represent them, should by all means be obtained—provided their interpretation of the convention be legitimate, according to the usual understanding of such treaties by natives generally. But if it should appear, that their view of the matter is, that, in virtue of the Kandy convention, every interest in the Kandian country was thereafter to stand for ever in *statu quo*, and all things and interests whatsoever to remain for ever, as they were at the time when the British Government became masters of the country—too much pains could not be bestowed to show them the unreasonableness of such an interpretation. Yet there is ground to apprehend that such is their conception. Thus, in the petition of the inhabitants of Dumberre against the new taxes, the 3d complaint opens in these terms:—"That the Government has altered the laws and customs in force, at the British accession to the kingdom of Kandy, is evident from the following facts." Ceylon Papers, p. 113. This shows that the principle of the grievance is the alteration of customs and laws, apart altogether from the question of the merit of the changes. The same fact is also very emphatically brought out by Lord Torrington, in a remarkable despatch to Earl Grey, dated August 11th, 1818, in which His Excellency assigns his views as to the causes of the Kandian rebellion, and at the close uses these words:—"Above all, I cannot forget the expression, which was addressed to me by one of the Chiefs, at a solemn conference at the pavilion at Kandy last year, to the effect that '*if you neither respect our religion, nor our customs, what is the benefit to us of the British Government?*'" Ceylon Papers, p. 188. Here we have the true Asiatic. The same view of things appears also in the evidence of the Priest, Panabokke Guncratane Unanse. He assigns, as the first ground of rebellion, the abandoning of the temple Dalada Mahgawa, and the other temples, called Dewalis; and as the second "that contrary to the customs of the Kandian country, individuals of low caste are made equal with those of ancient and high families, or equal power is given to the former & to the latter," (p. 229)—an objection, with which it is most instructive to compare Sir J. E. Tennent's remarks on this subject. "It is a fact, (says Sir Emerson, in one of the paragraphs of his tour of conference,) worthy of your Excellency's special attention, that the districts thus well affected and peaceful, are chiefly under the charge of chiefs and head men, who have been chosen by Government, in consideration of their intelligence and ability, and who are, in many instances, men of inferior caste while the Corles (districts) recently

in rebellion are those placed under chiefs, who had been continued in office for no better consideration than their hereditary rank, or that deference and submission which the people exhibit to the pretensions of caste and family." (p. 200.) And here let us quote these all-important observations on this head from another report by Sir Emerson, the result of a former trip among the people. "Whilst the tendency of our recent policy has been, by abolishing unjust distinctions, to bring down the power of the chiefs to the level of the people, we have forgotten the still more important duty of elevating the people nearer to the level of the chiefs; and whilst, as a matter of course, the head men and their creatures are the **organs** of all information conveyed to the natives, and the immediate **authors** of all the impressions they receive on public or local matters, we have not amongst the people themselves, throughout the interior of the island, any controlling check whatever, nor any countenancing authority to detect abuses, and encourage the well-affected. *We have no press, no paid police, no resident justices, no itinerant catechists, no school-masters, in short, no class, whose intelligence and independence would be a restraint upon the assumptions or misrepresentations of the chiefs.* (B. B., p. 163). He had previously said, that periodical circuits, and personal visits, attention to complaints, and inquiry into abuses on the spot, more frequent intercourse with Europeans, and the general diffusion of education, would soon quicken the apprehension of the natives, and set matters right: and there can be no doubt, that, as to all these matters, there has been most culpable neglect in all the successive Governments of Ceylon, since the acquisition of the Kandian country in 1815.

But let us return to the causes of dissatisfaction with Government, as ascertained from the Priest Pannebokke already referred to. The four following, together with the two, which have been stated already, constitute the first half dozen—the number being thirteen in all. "3d. When roads (says he) are being made, or opened through districts, or villages, some of the drunkards and vagabonds, employed on them, use most indecent and improper language, which, not only females, but even males, are shocked to hear. They forcibly pluck and take away the fruits from the neighbouring gardens. In some districts, Coffee estates are left without fences, and the cattle, that enter them, are shot; or they are tied, and the owners are made to pay £1, or £2, for each head of cattle. This is done only in some estates, and not in others. 4th. That, after Coffee estates are planted on hills belonging to Government, the neighbouring waste lands, being private property, are prevented from being

cultivated, on the alleged ground that they are cr on property. 5th. Whenever taverns are established in the interior, either on the road side, or in the villages, the neighbouring inhabitants become drunkards, use indecent language, gamble, commit robberies, burn houses, and in some instances commit murder. 6th. Some of the low country people, uniting themselves with drunkards, kill privately the cattle of other people, and eat their flesh." Now these, it must be confessed, are very substantial grievances to a people quite indisposed to participate in the advantages of the Coffee speculation, and who formerly occupied these mountains, as if they were all their own; and, let us add, grievances to a priesthood also, who, though they take no active interest in the morals of the people, nor are required by Buddha to do so, yet believe themselves to be hindered in their own march towards Nirvana, which is all their mission, by contact with every thing that is immoral, or impure. It is quite obvious, however, that if the Kandian country was to be opened to agricultural enterprize at all, these are evils which any Government could do but little to prevent.

As to taverns, indeed, to which most of the priests' grievances are plainly to be ascribed, we trust that something will soon be done: though, of course, it would be too much to insist upon it now, when the sals of the revenue of Ceylon are so completely backed by the causes, which have been stated. For a revision of this source of revenue, and of the ordinance by which it is raised, every principle of justice and of humanity calls. Not less than one-sixth of the entire regular revenue of Ceylon is derived from arrack and toddy farms, and from duty upon stills, and spirit licenses. The ordinance is so stringent, that a native incurs a penalty, if he even venture to draw a tumbler of flower sap from his own cocoanut tree, without first procuring and paying for a license. He is thus forbid access to an innocent and healthful beverage, which the trees of his own garden yield; and, what is worse, he is required, if he will have it, to go to the tavern for it, where he can only procure it in an already intoxicating state, and accompanied by the persuasion of the tavern-keeper to take arrack instead, which it gives the latter less trouble to keep in the tavern, and which pays him better. Add to this, that the arrack farms are so large, the rents so high, and the importance of the renter so great in the eyes of his countrymen, that the wealthy Singhalese bid against each other for these farms at such a rate (they are sold by public auction), that the purchaser has no chance of recovering his money, but by offering every conceivable induc-

ment to the entire population, in the district which he farms, to drink ardent spirits. Nor is it possible for the Government to prevent this evil, while the present system continues. When objections can be raised against any particular taverns by missionaries, or well conducted natives, the Government agents (collectors) do indeed readily order them to be shut up; but the renter is not long in finding another more secluded spot in the same neighbourhood, where the poison may be dispensed, and greater crimes indulged. This is surely a wretched state of things, demoralizing and ruinous to the native population, to the last degree.

Still it is only of a piece with the old revenue system of Ceylon. Thus, there is also a land revenue, more honestly a paddy tax, which yields one-sixth of the regular revenue remaining, after the produce of the arrack rents is deducted, and, by the ordinance under which this is collected, every villager is obliged to report to a head man, perhaps at some distance, and perhaps an unaccommodating, insolent fellow to boot, that his field is ripe for cutting; and he must wait for the head man's leisure, and for Government watchers, before he dare cut it down, although, with every breath that blows, the grain may be falling in bushels among the mud beneath.

And then again, all of a piece, there is the salt tax, from which, deducting the arrack and paddy taxes, one-sixth of the remaining revenue is derived, which makes it penal for a man to gather up the salt, which the friendly sea and sun unite in throwing up to him at the foot of his garden. No doubt through custom the people are now reconciled to all these taxes. But such imposts give Reason such offence, that she forsakes the people who find no fault with them. They are altogether opposed both to the intellectual and moral development of the Singhalese, and of every other people. But until a new system can be introduced, we need not enlarge on this theme now; for if you abolish these and such like taxes, where is the revenue of Ceylon? As a grand step to develop native industry and foster produce, all export duties have been abolished by Lord Torrington's Government, except a comparatively small residuary duty on cinnamon, which is also ordered by the Secretary of State to be abolished, the first moment that the state of the revenue will allow. Co-ordinate with this, it is to be remembered, that, several years ago, in order to free the Government from all charge of being a trading company, the cinnamon gardens were sold by public auction to private parties. The pearl fishery also, after yielding the best part of one million sterling

to the British Government from the date of its accession till the year 1837, has since that time, through causes not discoverable, yielded absolutely nothing. What may therefore be considered as the natural and peculiar sources of revenue in Ceylon are gone for ever. In the present transition state, the main burden of the regular revenue lies upon imposts, stamps, and tolls; but these depending (as they do) for their productiveness mainly on European enterprise, and not being benefitted one anna from one in ten of the natives—it becomes indispensable to reach the people by new taxes, which shall be such, that without offending reason and justice, or dissuading from industry, but rather urging, or even forcing to it, till the habit is formed, they shall produce the revenue which is indispensable to the maintenance of the Government. The Dutch, by pursuing the system which has been described, and securing a revenue by taxing the very necessities of life, and the springs of the cherished activity of the natives, made Ceylon, by the sale of the Government cinnamon sent to Amsterdam, to be worth nearly £100,000 yearly to the mother country. England asks no profit: she only asks, that Ceylon shall support itself. But this she asks magisterially; so that plainly the thing must be done: and, let us add, £21,000 must be paid to boot, in aid of the Queen's military chest—a heavy charge this, and a sore disparagement. What then is to be done? Plainly the system, which was begun nearly half a century ago, *must* be pursued. The subjects of the Queen of England in Ceylon are not to be looked upon as mere things of custom; they are to be treated as human beings, capable of activity, and self-development. What though it be true, that such is their present intellectual state, that they appear to consider the repeal of a long established tax, however shameful and unjust, as great an injury and offence on the part of Government\* as the appointment of a new one? gradually

\* This fact had within the last few years a curious verification in Ceylon. There used to be in the Dutch time a fish tax—every fish that was caught in the sea was required to pay a tax, for the privilege—we may suppose, of being allowed to enter another element. For this purpose the Indian Ocean, which surrounds the island, was constituted a fish farm; and an organisation was established by the renters, at every fishing village along the coast, by which the fish might be sold, as soon as a boat landed, and the share of Government secured before any risk was run. This most obnoxious tax was done away with by Mr. Stewart Mackenzie many years ago. But, strange to say, the natives still keep up the organisation of the fish tax for their own comfort (which lies wholly in the maintenance of a custom, be it what it may); and at Colombo, the metropolitan province, they sell this sea farm themselves, year after year, as Government used to do, for the behoof of their priests, who, being Roman Catholics, have not the same objections to the receipt of money that Buddhist priests have. Let us add in justice to them, however, that they have not the same indolence, and appear to bestow the money faithfully to their own church extension purposes.

they will get out of such feelings ; and when they awake to themselves, they will learn to appreciate good Government. Let them therefore be awoke, even though the first form of their awaking be that of uneasiness and discontent : for nothing is more certain than that, but for the existence of this uneasiness, there never would be industry, or activity of any kind, in man or beast.

The great measure of Government in Ceylon at the present moment is the Road-making Ordinance. It is positively called for by the fact, that, even supposing the public expenditure curtailed to the lowest figure practicable, still there would not be funds adequate to keep up and extend the communications of the island, as the welfare and progress of the population demand. The contemplated working of the new ordinance is thus described by Lord Torrington, in a despatch to Earl Grey, dated June 26th, 1848 ; “ I feel it to be my duty at once to state to your Lordship, that the principles, brought directly into practical operation by this ordinance, are of a much more important and extensive nature, than the title of the ordinance would intimate, if unaccompanied by an explanation of the machinery by which it is intended that it shall be reduced to practice. The importance of more ready and convenient modes of internal communication is too obvious to require more than a passing observation.....But the real effect of this measure will be to initiate the element of local self-government ; to habituate the mass of the people to interest themselves in matters which are obviously conducive to their individual, as well as their common, interests ; to teach them the advantage of combined exertions for the general good ; and, I am free to admit, to relieve the Government, or, rather I should say, to delegate from it some of the responsibilities, which directly attach to it, as the guardian of the people. I proceed therefore unreservedly to lay the matter before your Lordship in all its bearings. The report of Sir W. Colebrooke in 1832, his memorandum of 18th July, 1834, transmitted by Mr. Spring Rice in his despatch No. 38, of 28th October, 1834, and the views developed in your Lordship's committee of 1847, alike point to the expediency of entrusting to a certain extent the management of local concerns, and especially the care and maintenance of public works, to local bodies, duly elected, and invested with a power of local assessment for purposes of this nature. Sir W. Colebrooke's memorandum distinctly alludes to the ancient village councils of Ceylon, as institutions once popular amongst the inhabitants of the interior, and requiring little regulation to render them an efficient means for providing for the police, for

the registration of lands, and for other objects of local interest. At the same time he refers to the regulations, framed in Java, by Sir Stamford Raffles, during the brief period of our occupation of that island, for restoring to the original native institutions some portion of the effective character which they had lost. No steps, however, appear to have been hitherto taken in Ceylon for carrying out the recommendations of Sir W. Colebrooke in this respect, although fortified by the approval of the Secretary of State." The present ordinance, though ostensibly, and in truth practically and simply, a Road Ordinance, is in reality the first step yet taken in the direction of self-government. But we must refer to the entire despatch, which is a very masterly production, as also to the second of its inclusives, viz., a minute of the Governor to his Council, from which it appears, that His Excellency proposed to set about the matter, by the establishment of rural municipal bodies, in the first instance. In favour of such a step very much may be argued; since, doubtless, if the measure had been precluded in this way, it would have been accepted as a boon by the natives, who are universally disgusted with the system of the head men, who form a dead weight, and in fact a barricade, between them and the English Government, to which they only want free access, in order to be both contented and happy. Through the influence of the official head men however, we presume, Lord Torrington's more enlightened policy appears to have been overruled. There was at one time reason to apprehend, that in all, but the most enlightened, parts of the country, the natives would remain quite passive, and refuse or neglect to elect their division officers; which apathy, or passive resistance, the head men would of course favor to the utmost, their constant policy being to persuade Government, that nothing can be done among or for the natives, but by and through them. To admit this however is to consign the masses to profound ignorance, and degradation for ever. We understand, however, that, contrary to what was apprehended, not only in the more enlightened parts of the country, not only over all the maritime provinces, and in all the neighbourhoods of the great roads in the interior, but throughout the country generally, the people have come forward well: and there is reason to believe, that the ordinance will bring itself into operation within a very short time. But truly ridiculous, and beyond all possible anticipation, are the constructions which such people put on the proceedings of a Government, however enlightened according to European notions. Thus, as the Road Ordinance requires every man between

the ages of eighteen and fifty five, either to work, or to supply work for the roads in his neighbourhood, for six days in the year, not only was it said to be a revival of the Rajakaria, or scif-system, (although head men are included as well as tenantry, and in a word, every body except the Governor and the Buddhist priests, who showed that their religion, as recognised by the Kandian laws, forbade both their working, or giving money instead), but, because those who would not work had to pay a sum which would purchase six days' labour, and which in different districts of the island would vary from one shilling to three, it was called a Poll Tax—such as used to be imposed by the Dutch on strangers for leave to sojourn in Ceylon, and was therefore viewed by the Singhalese as a disgraceful encroachment on their rights as the lords of the soil. It was called by them a "body rent"—"a tax for leave to live." The construction, which they put upon another tax, or rather registration of dogs, with a view to the diminution of their numbers, and the putting a stop to the brutal work of an annual butchery of them by the police, was also very strange. "Our dogs!" said they, "Tax our dogs! Tax dogs! dogs! Are we indeed to be ruled by a Government, which raises its revenue by dog's flesh?" Almost equally queer was their reception of another tax, commonly called the Gun tax; one main object of which was to register the fire arms actually in the hands of the natives. Instead of sending their guns in lots to the kacheris to be registered, if they did not wish to make a hunting excursion of the trip, which only the knowing ones did, they all came trudging along the road, every man with his gun over his shoulder. And now, behold them on the way, awoke to that heroism which arms inspire, finding that their dogs' teeth were to be honoured by Government by being made the subject of a tax, and Buddha's tooth degraded, by being given over to their own keeping; under a sense of these manifold wrongs, the old Kandians began to stroke their beards in the jungle, imitating the Wanderus, or Seleni monkeys, (whom the mysterious author of the *Vestiges of the Natural History of Creation* would find to bear out his theory excellently well, having all the characters of being immediate ancestors of these Kandians); they did more; they began to gather in companies, and to traverse the jungle, brooding rebellion, and bent on having a king of their own. And kings came forward—kings one, two, three, knowing fellows, and not in earnest like their deluded followers. And in fact, so well did these rascals play their part, that only one has yet been caught. It was intended by the true movers of the re-

bellion, that these should be but men of straw; but the truth is, that they kindled such a blaze, as scorched the real culprits far more than themselves.

But, to be more serious on what is certainly a serious subject, it appears to be a great question, whether Lord Torrington is to be justified, in the very vigorous measures which he took to repress this rebellion. We certainly hold it to be against them, that Sir H. Maddock had such a hand in them, as he appears to have had; and that he should have come in between Lord Torrington, and his Attorney-General and Chief Justice, as he appears to have done, is very much to be deplored. This much is certain, however, that Lord Torrington's measures were eminently successful: and if, in general, where there is a question as to the means employed, success be allowed to give the casting vote, we do not see why Lord Torrington should be deprived of its benefit in this case. Much has been said no doubt, especially by the Press of India, to the prejudice of Lord Torrington. There has even been a kind of hue and cry against him; but we must confess, that in vain do we look for any adequate grounds. He seems, indeed, to be somewhat given to hurting the self-esteem of the merchants of Colombo, as well as that of European descendants, and other individuals besides; all which is to be regretted, but chiefly for his own sake, because a Colonial Governor is always good game for an angry tongue to fly at. But, looking to his Government, we see a great work going on, which must have cost him, and his more immediate counsellors, infinite labour, a work, in which he deserves in an eminent manner to be supported; and we will not refrain from expressing the hope, that Lord Torrington will remain in Ceylon, until he has done all that he can to relieve the island from the dreadful financial embarrassments, in which, contrary to every previously-published account, he found it on his arrival, and to see the Road Ordinance realizing itself, and accomplishing the highly important objects which were contemplated in enacting it, and by Earl Grey in sanctioning it in terms unusually complimentary. *Ceylon Papers*, page 339. It is the most decided step which has yet been taken in the grand experiment of endeavouring to replace the Asiatic type of civilization by the European. Let us hope that it may be more successful than the practise of Trial by Jury and the English system of administering justice; and that it may be more maturely considered in all its bearings, than the emancipation of the natives from forced labour. Between these two great movements there was an interval of twenty-one years; and, from the last to the pre-

sent time, seventeen have elapsed. It was surely time to make another move. We shall watch the result, and recur to it hereafter.

Only one word more on a subject which appears to engage much of the attention of the committee of Parliament on Ceylon affairs; we mean the fact that martial law was proclaimed in two districts during the late rebellion. On looking dispassionately on the various statements affecting the administration of Lord Torrington in Ceylon, and weighing the points on which his discretion, or his policy, has been impugned, either by the local press of the island, or by the representations made on its authority in the House of Commons they all resolve themselves into these main questions;—was the proclamation of martial law the result of an absolute necessity, with a view to the suppression of the rebellion of last year? or, admitting it to be necessary, was it enforced with sufficient judgment and forbearance?

On the subject of the first enquiry, we can unhesitatingly answer in the affirmative. We have read all the papers laid before Parliament; we have seen all the communications of the newspaper press; we have conversed with numbers of persons from Ceylon, both military and civil; and, we are bound to say, that we have from one and from all the same concurrent assurance,\* that the proclamation of martial law was not only prudent and indispensable, but that the vigour displayed by that measure, and the firmness with which it was enforced, were the means of saving the interior of the island from plunder and devastation, and the colony generally from anarchy and bloodshed. This is not the first insurrection, or threatening of an insurrection, with which the Government in Ceylon has had to contend. The restless chieftains of the Kandian hills have neither the good faith to abide by the terms of a convention, nor the patience to accommodate themselves to the march and movements of a liberal Government: and, at every interval of ten or twelve years, the local authorities have had to struggle with rebellions, some of which have extended to one or two years of turbulence and devastation. We are credibly informed, that a war similar in extent and duration was contemplated on the recent occasion.

\* We are wrong when we say that we have heard of no one, who condemned the policy of Lord Torrington in this particular. We see by the Ceylon Papers, that a Mr. Wodehouse, one of the Civil Servants of the Colony, entertains that opinion, *Probat regulam exceptio*.

Papers laid before Parliament show, that Government were in full possession of the plan : and it is equally demonstrable, that nothing but the boldness of Lord Torrington's measure, in proclaiming martial law in each district in succession, as the flame of rebellion burst out within it, prevented the whole train from being ignited, and wrapping the interior of the island in a blaze.

But then it is said, even admitting martial law to have been unavoidable, the punishments inflicted on the guilty were attended with circumstances of unnecessary severity ; for example, that it was an insult to the faith of the Singhalese to shoot a Catholic priest *in his robes*, and an unnecessary aggravation of his sentence to whip the pretended King, before transporting him to Malacca. Why, this pretended King was a scullion in the kitchen of the Colonial Secretary. So far from being a Prince of the Blood, he was a cook of the lowest caste, a man, who was not only degraded by his low pursuits, but had been previously incarcerated for his unlawful deeds. Forsaking the accomplishments of Soyer and Careme, he exchanged the cares of the kitchen for those of bullock driving : and, being unhappily arrested for bullock stealing, he had but recently escaped from the hospitalities of a jail, when he longed to undertake the cares and anxieties of Royalty, and was actually seized by the mob, when driving cattle into Kandy, and placed at the head of the rabble, who advanced in his name to sack the bazars of Matchi, and the town of Kornegalle. He was to have acted as the puppet of the rebels, till the country should be fairly aroused, and the English garrisons butchered ; and then this illustrious *Emmanatus* was to have yielded his diadem to some nobler aspirant. Unfortunately the police were too precipitate ; and he found himself in a lock-up house, when he had anticipated a palace. To have treated such a miscreant with the honours of a Prince, or even to have punished him with the horrors of war, would have been to prostitute both. Lord Torrington took the common-sense view ;—he whipped him soundly, and sent him to write his reminiscences of royalty at Malacca. The last and dullest of these diatribes against Lord Torrington turns on his having shot the priest, who was condemned by a court martial as a traitor, *in his robes*. Of course, this complaint comes exclusively from England. No one in his senses would concoct such a matter into a subject of complaint in Ceylon ; for the very obvious reason, that a Singhalese priest has no other robe than that of his order. He must either have been shot in this

covering, or without any covering whatsoever. It is the yellow robe, which is the characteristic of his class, which he affects in his noviciate, and assumes on his admission to the priesthood, when, as a matter of religious obligation, he renounces every other, as secular and profane. His yellow robe is his vestment by day, and his covering by night; he carries it through life; it is his coverlet in dying; and, on the funeral pile where he is consumed, his last earthly vestment is the long accustomed robe of his order. To have stripped him of this, previous to execution, would have been to add indignity to severity, degradation to punishment. It would have been tantamount to the studied insult in the times of chivalry, by which the spurs of a Knight were hacked ignominiously from his heels, before he was led out to be beheaded.

And such are the charges on which the fair fame of the Governor of Ceylon has been lied away by the Press, and his policy, equally with his humanity, made a subject of doubt by the highest tribunal of his country—a Parliamentary inquiry.

Of the result of this inquiry we cannot for a moment entertain a doubt. It is pending whilst we write; but we cannot hesitate to express our conviction, that its issue will be equally honorable to the injured fame of Lord Torrington, and disgraceful to those, by whom it has been so loudly and so falsely assailed.

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- ART. V.—1. *Reports and abstracts of the proceedings of a Committee for the investigation of the mineral resources of India.* 1841-42.
2. *The Economy of a Coal-field by Jus. F. W. Johnston, M. A., F. R. S. S. L. and E., &c. &c. &c.* 1838.
3. *Dictionary of Commerce and Commercial Navigation, by T. R. McCulloch, Esq.* 1839.
4. *Encyclopædia Britannica. Articles, Coal, Mining, &c.*
5. *Edinburgh Review, Vol. II.*

LORD BROUGHAM relates as an anecdote of the first Lord Chatham, that he once began a speech in the House of Commons with the words, "Sugar, Mr. Speaker, Sugar:" and, then observing a smile to pervade the audience, he paused, looked fiercely around, and with a loud voice rising in its notes and swelling into vehement anger, he is said to have pronounced again the word "Sugar" three times; and, having thus quelled the House, and extinguished every appearance of levity or laughter, he turned round, and disdainfully asked, "Who will laugh at Sugar now?" We cannot boast of such extraordinary powers as he was possessed of, and we must trust to the great importance of our subject at the present time, in venturing to commence our article with the words, "Coal, Coal, Coal." Would that we had Chatham's power, wherewith to enforce this subject on the attention of our readers—a subject by no means beneath his enlightened mind, but one which would have engaged all his warmest attention: or, would that we had now amongst us such a one as he was to rouse with his impassioned voice this country from its death-like sleep. With his determined spirit what could not our present Governor General effect? What opportunities for improvement now exist on every side of us? What vast fields of unexplored resources? What mines of fertile ore? What unconnected Provinces? What undeveloped sources of wealth? For India what, we may exclaim, has been done, to further the interests of this vast population, compared with what yet remains to be done? The hero of modern civilization needs not weep for want of worlds to conquer, for here are realms too wide for the widest ambition. To conquer and annex with the sword is but the glory of an inferior order. To civilize, enlighten, and protect, is that of the superior order of men, by whom the human race is sometimes rarely blessed. To develop the sources of national industry

is one great mark of a beneficent ruler ; nor is the subject of our article one of the least important of these sources.

In these days of steam and machinery, nothing prospers without coal. We may say, that whatever steam does, coal does, and far more besides. Without it where would be our railroads, our steam-boats, our overland communication, and all our long train of manufacturing engines of all sorts, sizes and descriptions ? Paralyzed, powerless, and helpless they would lie. Banish coal from the earth, and the civilized and enterprising European would be stripped of half his strength, and would recede into the depths of comparative barbarism. What would England be without its coal mines ? It employs directly in this trade alone upwards of 200,000 persons, and consumes annually twenty millions of tons, besides what is exported.

Dr. McCulloch, in reference to its value to Britain, says :—

“ It is vastly more precious than would have been mines of the precious metals, like those of Peru and Mexico ; for coal, since applied to the steam engine, is really hoarded power, applicable to almost every purpose, which human labour directed by ingenuity can accomplish. It is the possession of her coal mines which has rendered Britain, in relation to the whole world, what a city is to the rural district which surrounds it ; the producer and dispenser of the rich products of art and industry. Calling her coal mines the coal cellars of the great city, there is in them a supply which, at the present rate of expenditure, will last for 2,000 years at least ; and therefore a provision, which, as coming improvements in the arts of life will naturally effect economy of fuel, or substitution of other mines to effect similar purposes, may be regarded as inexhaustible.”

Professor Johnston, in his admirable lecture on the economy of a coal field, thus writes :—

“ The immediate marketable value of the produce of a rich coal district is almost as great as if the same extent of country produced gold, or silver, or diamonds, in equal abundance with the richest known districts in the world. The total value of all the gold and silver raised from the mines in South America in 1800, when they were all in full activity, was estimated by Humboldt at £8,700,000. The area of England is hardly a tithe of this great mineral district ; and yet the coal consumed in England and Wales, being about 20 millions of tons, estimated at 8 shillings a ton, amounts to 8 millions sterling. A higher estimated value of one shilling a ton, which is still lower than the value adopted by some political economists, would give us a surplus for the actual value of coal alone, exclusive of every other mineral raised in England and Wales, over the entire value of the precious metals raised in that tract of country, which we have been accustomed to consider as the richest in the world.”

This age in particular can do nothing without coal, which is daily becoming more necessary to every one, from the palace of the prince, to the most wretched hovel in the backwoods of America. The age lives, eats, drinks, clothes itself, houseth

itself, maketh war and peace, all through the agency of coal. Wrapped in the fabric of the loom, which whirls in obedience to the power of steam generated through coal, the infant is lulled to rest, while each ornament on the coffin of its sire is fashioned by the aid of the same material, and the very planks of the coffins of the poor are cut by the force of its agency. In India its power has yet to be shown; but in England, what does it not do? It brews and bakes, grinds the coffee and the corn, first makes the clothes, and then washes them and dries them. The most minute articles of dress or of ornament, and the most stupendous parts of our more than gigantic machinery, are both alike indebted to coal, either for their beauty or their utility. Pins and needles, tape and bobbin, hooks and eyes, buttons and braid, are all made through the help of coal; and each rivet in that mighty mass of machinery and engineering skill, that monthly leaves our harbour, is formed by its superhuman force alone.

It is no longer "steam, steam, steam," but "coal coal, coal," we must cry; for coal can alone adequately supply the demand. All the wood in the civilized world would be immediately devoured, and the cost of all articles enhanced an hundred fold, were coal to be suddenly annihilated. In coal England has reserved in store, even at its present extravagant rate of consumption, a supply of fuel for upwards of two thousand years: whereas the timber obtainable from a whole country could scarce supply the manufacturing fires of London alone for a single week. Are we not right then to cry "coal," and to wonder at the apathy and indifference of a lethargic people, who permit such important sources of wealth to lie unworked? The fields of coal in India have been scratched as it were, and such first-come-to-hand and indifferent material, as was on the surface, has been sent in driblets, by basketfulls at a time, in the wretched boats, and still more wretched carts, of the country, to the market of Asia. Thus has Calcutta been supplied. That it has been so supplied for years past is a matter of public notoriety; and it is sufficient to disgrace us for our want of enterprize in the eyes of the whole civilized world.

We need not stop here to insist that coal does exist in India of a good workable quality; for coal is of many kinds, and of all degrees of value. There are black coal, uninflamable coal, and brown coal, each subdivided again into many species. Amongst the black coals are slate, foliated, and cannel; and amongst the uninflammables are enumerated Welsh culm, stone

coal, Kilkenny coal, and deaf, or blind, coal. Upwards of seventy distinct varieties of coal are imported into London, which are all distinguishable by those conversant with the trade, and are all valuable. Among the many thousand square miles of coal fields that exist in India, beds of all varieties are doubtless to be found, and amongst them some of the best quality. The records in the Bengal Secretary's Office, inkings of which have from time to time crept out, and the different publications, reports, and letters, which have constantly appeared on the subject, demonstrate that it must be so. The bitter dissensions, squabbles and disputes, both in public and private, between all those who either have, or think they have, a title to any portion of these extensive fields, show us also that the property is even now valuable, and will one day become far more so. Such accounts, as we have had access to, also show that a good workable coal can be raised from the pits at a very small charge, in some places so low as two pice per maund, and that the great expense incurred is in the carriage of the article to market. Coal is now supplied in the Calcutta market at six annas per maund.\* The carriage therefore costs at least five annas per maund; and the question is how to reduce this cost of carriage. We must first examine as to whence we receive the coal, and what are the facilities for its transport. In the first place, coal abounds in the plains that border the Damúda in Burdwan; secondly, there is coal in the hills, near Chirra Púnjí; thirdly, there is coal in Assam in several places; and last, though not least, there is a field of coal sixty miles inland from Surajgurra, which has been lately again brought to notice by the Government Geographical Survey. We say *again*, for we believe this same field has been noticed on several previous occasions. It exists on the southern declivity of the hills, about sixty miles south and west from Surajgurra, and is said to be of better quality than the Burdwan coal. Other fields of coal exist in different parts of India, but far removed from the Calcutta market. It is not yet very clear, amidst the mass of conflicting testimonies, which is the best site whence to obtain our Calcutta supply.

It is still therefore a desideratum to ascertain this fact. Government has done something towards this, and is, as

\* Our extra-Indian readers will not err widely, if they reckon a Maund as the twenty-seventh part of a ton, and an anna as three-halfpence. Thus the present price of Burdwan coal is now about a guinea per ton in Calcutta. It is probable that two tons of this coal may be on an average equal in steam-raising power to one ton of good English coal.

usual, creeping on with slow reluctant steps, as if unwilling and afraid to snatch the glowing prize. Private parties are endeavouring to do something towards it in a small way, but in a very small way indeed. As an example, a few private persons in Calcutta lately employed at their own cost two individuals to examine the district around Bhágulpúr. So the public papers at least have casually mentioned; but we fear that their enterprise has ended in smoke, not generated however from their own coals. The persons employed did, it is believed, exert themselves for some time, but have recently, either from weariness, want of pay, or disgust at the vapoury project, given up the search in despair. Such petty efforts can never meet the ever increasing demand.

We want railroads, steamers, cheap steam navigation with England, Ceylon, the Straits, and to our inland provinces by the river route. We also require sugar mills, rice mills, paper mills, and manufactories of all kinds all over the country. For all these things we require fuel; and experience demonstrates that that fuel must be coal. No substitute has been found for it, nor is any likely to be found in our days. The demand, therefore, vastly exceeds the supply that is now brought to the market; and this fact is the more remarkable, as it is well known that an inexhaustible supply of tolerable fuel does exist, ready for the future wants of this fertile country.

Under ordinary circumstances the supply would soon satisfy the eager wants of the community. The causes therefore, that lead to the present anomalous and unsatisfactory state of things, can neither be transient nor trivial. They are, indeed, we fear, too deeply seated to be all at once removed; or to be suddenly eradicated without the greatest resolution and skilfulness of treatment. Still much may be done by rousing the community at large to the full importance of the subject. One point, as we previously mentioned, is clear, that, in whatever locality the coal may be situated, the chief difficulty that has to be met is its carriage to market. The means of carriage must be secure, and available at all seasons of the year. To work the beds of coal at one season, and then stock and store the mineral for future conveyance to market, is a most objectionable system, inasmuch as the coal deteriorates rapidly from exposure to the sun and air. It is partly owing to this system that such bad coal is now supplied; as the coal of the Damúda is said to lose 20 per cent. by this exposure to the elements.

But the exposure would be at once obviated by a secure means of transport, available at all seasons of the year. At present no regular means of carriage exist from that coal

field, except the uncertain rushes of that most uncertain stream, the Damúda; and thus the hopes and fears of steam shareholders in Calcutta rise and fall, according to the rise and fall of the torrents in its bed. Some years ago a canal was proposed to run through the rich district of Burdwan, which would have been available in part for the conveyance of coal. But this project has long since been abandoned, if indeed it ever was seriously entertained. A far easier plan would be to construct a common iron tram road, direct from the heart of the coal fields, either to Calcutta, or to the nearest point on the Húglí: nothing short of this will ever render the inhabitants of Calcutta independent of that capricious mountain stream. No expensive railroad would ever pay for this purpose, nor is such required: all that is necessary, is a cheap and regular means for conveying the produce of the mines to market, without exposing the coal to the effects of the weather for many months, as is now done. We might innocently ask, why is this not done? Why has no tram road ever been constructed? In other countries, the inhabitants would combine for such an object of utility, or some enterprising individual would step forth. Amongst all the wealthy Babús of Calcutta, or Bengal, is there no one with sufficient energy for such a work? Alas, neither road nor canal is likely to be made by them. The boundless store of wealth that lies at their feet is unnoticed and unknown—mines of richest ore; gems far surpassing in national importance and value the far famed Pitt Diamond, or the Koh-i-núr.

But are there no other parties who might come forward? Will none of the great body of highly honorable men, of whom the services are composed, assist? Will Government itself do nothing? For it seems evident, that without its aid no one will stir hand or foot in the matter. From peculiar circumstances, Government is omnipotent in this country. The meanest Government servant, with his talismanic badge of office, is more than a match for hosts of unbadged men. His word is law; his acts are right and true. There is no resisting the persuasive influence of one in authority. This being the case, the proper course is for the Government to undertake the business at once; and then we might hope, that it would be both effectually and speedily done. But the misfortune is that no Government ever did move *at once*; and we need not assure our readers, that the Government in Bengal is no exception to the general rule. It is in fact, by some inherent law in its constitution, dilatory in the extreme. The whole state machinery is so complicated, and requires so much rubbing up and polishing to overcome the natural friction of the parts, that we des-

pair of ever setting it in motion in any direction. Every thing is carried on in writing, and correspondence is endless and tiresome. Months and years of valuable time are spent in reading and writing innumerable Minutes and Reports. Formal letters accompany all these documents; and such a mass of papers is accumulated on every trivial subject, that the mind becomes confused, and the idea is erroneously acquired, that a great deal of business has been done, by the mere perusal of documents; whereas this truly dry-as-dust system only tends to bewilder the brain; and much more real business might be done with a saving of half the paper. Every one connected with Government is well intentioned, and inclined to do what is right; but every one is not the Government. If we ask the first Civilian we meet, how to set about it, he says, Write to Government. Ask the Secretary; he says, Write to Government. Ask the Governor of Bengal; he says, Write to Government. Ask the Members of Council, and they all say the same. Ask the Governor General himself; and even he says, if in no mood to comply with the request, Oh, write to Government. This virtually shelves the question for the time, and perhaps for ever; for in some departments letters lie for years unanswered. One might in all simplicity ask, who, or what, is "Government," and where does it dwell? In the air, on the earth, or on the sea? Is it a poetic fancy, or a legal fiction? What is it, or where is it? Has any one ever seen this Government? With whom does the magic power lie?

Lord W. Bentinck, and such like obstinate old fellows, would sometimes grasp this power themselves, and wield it at their own risk and responsibility, without permitting themselves to be trammelled by the absurdities of the age, or of *the system*, as it is most unworthily called. But it is to be recollected that their doing so was no part of their original agreement with their masters. It was not in the bond, and often cost them dear. Governors we have had, and some of them very good Governors too: but no such thing as really good Government—no grand extended system of provident arrangements for the welfare of the people, for the interest of the whole community, and for the benefit of the country at large, by the development of the resources of the State, has ever yet been seen in this country.

Statesmen and legislators likewise we have had, and philanthropists and enlightened men in abundance, amongst our councillors; but the chief thing requisite is a steady uniform system of development for the public weal. Without this there can be no life in the body politic. Every thing in nature seeks to

expand itself; and, where there is life, there is implanted, even in the hidden germ of the smallest weed, a power that nothing short of annihilation can resist.

Most of our public officers have been hard-working men, and many of them enlightened, and alive to the necessity of progress and development. Still over all a dull and leaden pall appears extended, and apathy and indifference prevail. Now it is proverbial, that what is every man's work is no man's work, and that, unless men are specially appointed from time to time for such objects as those we are now advocating, nothing will be done. Supposing that an officer was appointed, on the understanding that he was to give his whole time and talents to the development of the coal resources of the country, we might then reasonably expect to get something done. It will not do to appoint a commission, or a board, or a committee composed of officers, many of whom have other duties to attend to. One responsible man should be selected, who should publish (for a searching and inquiring public to find fault with) what he can effect from time to time. The public, if left to do so, would soon keep him up to the mark.

The case at present stands thus. Fifteen years ago coals were sold at five annas a maund in Calcutta. The Government contract price is now six annas, and the demand is still increasing. It is very evident, therefore, that the means hitherto employed to procure coal in India have been ineffectual, and that there is now every chance of a rise, instead of a fall, in price. Indeed it may be asserted, that the only thing that keeps the price of coal even at this rate is the supply from England. We have received it from good authority, that English coals at nine annas a maund, are, from their superior quality, cheaper to use than Burdwan coals at five annas. So long, therefore, as it is profitable for our ships to bring coal on such a distant voyage, and to sell it in Calcutta at nine annas a maund, the price of Burdwan coal should never rise above six. But the supply from England must always be precarious, and it would be highly injudicious to trust to it. A further rise in the price of coal of one or two annas per maund would ruin half the steam trade of Calcutta. If the English supply should in any way be cut off, our overland communication would almost cease. A European war, for instance, might materially affect the supply. This is a point of vital importance, not only to the community, but to the Indian Government also. On the contrary, could the price of coal be by any means reduced to even three annas a maund in Calcutta, the State would be no inconsiderable

gainer. The Government of Bengal now annually expends a large sum in the purchase of coal. It would be well worth its while therefore, as a mere mercantile transaction, to pay five years' purchase to attain this supply at half the present price. That is, in other words, supposing the State now to expend five lakhs of rupees yearly in the purchase of coal of all kinds, (and we believe the total expenditure is much higher), it would be well worth its while to pay down twelve and a half lakhs of rupees, in order to save yearly the half of the annual sum now charged for coal. We should suppose that this is a plain matter of calculation, which simply requires to be set in a plain manner before the Court of Directors, to be at once sanctioned and approved. This leaves out all other benefits that would accrue to the State, and simply embraces the purely mercantile view of the matter, without however supposing, that the smallest profit should be derived from the capital expended on the road—which capital is to be returned by the saving from the reduced price of the coal. It is based on the supposition, that a tram road can be made from the nearest available field of good coal for the sum of twelve and a half lakhs of rupees; and that the cost of maintaining that road will be such as the sum charged for the conveyance of the coal can fully support, even at a low rate of charge.

The nearest available field is doubtless that of Burdwan. Its mean distance from Calcutta is about 100, or 120, miles. The cost of a good pukka road, (we mean a road metalled with brickbats,) is from 2,000 to 2,500 rupees per mile, according to circumstances. But we do not consider that it would be necessary to metal with any material any large surface for a tram road. A single line of light iron rails, laid on beams properly connected with sleepers, and supported by masonry, or posts, where any slight elevation was required, would be sufficient to convey the quantity of coal required, at the rate of eight or ten miles an hour. The road should be laid with a gentle slope, proportionally to the inclination of the country towards Calcutta. The draft downward would be little or nothing; and a very slight power, either of men, or horses, would be sufficient to convey back the empty carriages. Such a road, we are well assured, could be made considerably within the proposed sum; and for this paltry amount, sunk, or paid, the Government would obtain for ever, for itself and for its capital, a large supply of tolerable fuel at a moderate rate. Coal would then be as cheap in Calcutta as in London; and we should have nothing to complain of in this respect, at least for some time to come. The cost of keeping such a road in thorough repair, and keeping up a full

establishment of waggons, carriages, and horses, (or men) to convey them, should not exceed one thousand rupees per mile. The establishment need not be large or expensive; and a charge of even two pice per maund for carriage would amply pay for all the expenses. It is to be remembered, that this does not include any return for the capital that has been expended, as we suppose that the Government sinks, or pays away, this amount of capital, as the price of obtaining cheap coal; they would be the persons who would chiefly benefit by it, as they are the chief consumers. But would the State, even under these circumstances, lose by making such a road? It is just possible that some loss may be caused by it. But do not the advantages greatly preponderate over this possible loss?

It were easy to expatiate on them. The mutual action and re-action of different commercial products on each other are very remarkable. Thus by cheapening coal, we cheapen every thing else. Cheap coal produces cheap steam, and cheap carriage; therefore cheaper imports to the Calcutta market, and cheaper exports from it, either seaward, or for the inland trade. Coal, when cheaper, will also be used in a variety of manufactures in Calcutta. Cheap coal would rouse the sinking spirits of the various steam companies in Calcutta, and, by its magic influence, would tend to promote the health and comfort of our European troops. With cheap coal it would no longer be a question with Government, whether troops should be conveyed to the Upper Provinces by steam, or not; as it would become cheaper to carry them, than to march them up. The long and weary march to Allahabad would thus be avoided, and the fatal fever, or still more fatal cholera, would thus miss much of their accustomed prey. We have seen in the short space of two months more than fifty fine fellows thus cut off in one regiment alone.

But it is needless to enumerate the important advantages which the country would derive from this source, though it is necessary to show that the state would ultimately be the principal gainer, and that therefore it is to its advantage to come forward boldly in the work.

The coal companies could not do it, as they are too much involved already. Coal speculations are very often not profitable. Mr. McCulloch tells us, that numbers in England are ruined by them. Sometimes large fortunes have been made by individuals; but these instances are rare. The opening of a mine is a very expensive and hazardous operation, and of very uncertain result. Besides this, collieries are exposed to an infinite number of accidents, against which no caution can guard. So

great indeed is the hazard attending this sort of property, that it has never been possible to effect an insurance on a coal work against fire, water, or any other accident. These things being well considered, it must be evident, that coal companies cannot be expected to add to all these risks the expense of one hundred miles of road. On the contrary, the State, which will benefit by the work, should make it. No private company could make it so cheaply, or so expeditiously, while in their hands it would become a monopoly; and few, or none, of the anticipated benefits would result from it. But a road, made, as we propose, would be open to all, and would enable all parties alike to convey their produce from the collieries to the best market at a very low rate. The charge made, being only just sufficient to provide a fund to keep the road ever after in perfect order without further expense to Government, would ensure an abundant supply of the best material that was to be had in the Burdwan mines; and the Government would gain indefinitely, by the very force and energy, which such a supply of this "hoarded labour" would exercise on the commerce of the country. It would restore the City of Palaces to its best and most palmy days. Viewing it in this light, we cannot look on the original outlay necessary for this important measure as a matter of moment to the Government. As well might a petty Irish farmer argue, that he might lose by making a pathway to his pig-stye.

It may be argued, that the Burdwan coal is not good, and that all our cogent reasoning therefore entirely falls to the ground. But let us suppose it conceded, that the coal now obtained is not of the best description; still we contend that this circumstance proves nothing against our arguments. The coal, take it as it stands, is the best we have near Calcutta, and is already in almost universal demand, except for sea-going steamers, which must be supplied with such fuel as will give the greatest amount of steam with the least possible stowage.

About twenty-five lakhs of maunds of country coal are now yearly consumed. It may be presumed, that this consumption would be trebled, were the price reduced to one-half. The Government contract with the Bengal Coal Company for this very coal, and take at least three or four lakhs of maunds yearly, besides the large quantity of English coal still used by them.

But it is also fair to suppose, that, in a very short time after the opening of such a road, the quality of the article supplied would greatly improve. The most scientific and the most practical men, who have examined the subject, have universally declared, that the coal has hitherto come to the market in a

most deteriorated state. The capabilities of the mines are not yet fully known.

When secure and sufficient means of communication have been opened between the mines and the principal markets in the country, capitalists will then come forward, and work the different seams of coal in a more efficient manner.

At present, capital is thrown away, if expended on such uncertain property, and no one will embark in the concern. The works now at the collieries are poor and insignificant, compared to similar works in England, Belgium, or France. By sinking shafts to a sufficient depth, richer seams of coal will probably be found, than any which are at present worked in the Burdwan district. Shafts are frequently sunk in England to a great depth. At Annagher the principal pit is sunk 372 feet deep, and a second pit 318 feet. At St. Anthony's colliery, three miles below Newcastle, the bed of lower main coal appears to be 810 feet below the surface of the ground. At Monk-wearmouth colliery, the coal is brought up from a depth of 1,620 feet. In sinking shafts in coal mines, as many as thirty, or more, distinct veins, or beds, of coal are sunk through, before a main seam of coal is reached.\* Where there is more than one series of coal measures, on sinking through this main seam, a similar succession of strata succeed, with a second or lower main beneath. Hence arise the terms, "upper main," and "lower main." There is also another circumstance which renders it probable, that we have not yet seen the best coal that can be obtained in the Burdwan field. Coal originally was deposited over vast surfaces, such as inland lakes, or marshes, or the mouths of estuaries. Great portions of these beds have been either upheaved and denuded, or so convulsed by subsequent geological changes, that they are now worthless. Where the beds have been least disturbed, the coal is found to be superior in quality: thus, in the Newcastle collieries, the mines have been progressively advancing underneath the sea, and the coals have progressively improved. At Whitehaven, they extend more than a mile under the ocean, at a depth of 600 feet beneath its bottom. It is therefore to be expected, that in the extensive Burdwan coal field, portions may yet be found with a better quality of coal. All that is required is, that the communication with the district should be cheap, rapid, and secure at all seasons of the year. The parties, who now

\* At Auzon, near Valenciennes, a pit less than 100 yards deep passes through fifty layers, small coal, great, and at Liege, sixty one have been ascertained.—*Cuvier's Geology*.

possess property there, will thus be enabled to visit their works, and effectively superintend them. Houses and villages will spring up; and, ere long, we might expect to see hundreds of Englishmen, employed both in the pits, and in charge of the requisite machinery, practically teaching the natives of the place. All this would tend to raise the price of land, and of labour, would induce more cultivation, and in every way lead to further improvement. The whole produce of the district would find a cheap transit by the rail to Calcutta; and the returns to Government would in all these ways be considerable. Large sums have been occasionally remitted on account of the inundations in the Burdwan district; but, when the land becomes more valuable, the bunds would be more carefully looked after by the landholders and proprietors, and inundations would not be suffered to take place. It would then be as much their interest to do so, as it now is the interest of Government; but they, being on the spot, and necessarily employed in the lands, have more facilities for watching the bunds, than any establishment employed by Government for that purpose: and it is hardly necessary for us here to observe, that the slightest crack in a bund, when the river is full, is sufficient, if not at once observed, to inundate the whole country.

Tram roads, such as we propose, have been in use in England for a very long time. Those first used were simply wooden tram-roads, or railways, which were used in the collieries there nearly two centuries ago. Iron rails were first substituted for them in the Colebrook-dale works, about the year 1786.

Baron Charles Dupin, in his valuable book on British public works, tells us, that at Newcastle there were, even when he wrote, (about 1828 or 1830), two hundred and twenty-five miles of iron railways, along a space of twenty-one miles long, and twelve broad, above ground; and that those below ground were not less extensive. In Wales, iron tram roads are also most extensively used. In fact no works could be carried on without them. They are used for conveying ore and coal from the mines to the furnaces, and iron and coal to the canals and ports. In Glamorganshire alone, there are more than 300 miles of tram roads. These railroads, or tram roads, were made solely for private purposes, and for private collieries, or mining companies. But we propose, that, to provide against a monopoly, the Government should make the roads of this description required in Bengal.

Nothing is ever lost by a wise and careful system for developing the sources of wealth and prosperity within a state; but

in this instance, the direct returns would be considerable. If four or five lakhs of rupees are annually to be expended in the Punjáb, why, we may justly ask, should not some money be expended on useful public works in Bengal? It is, doubtless, very judicious to expend money in the Punjáb, and we shall be glad to see works commenced there, which will give employment to the people, and add in time to the revenues of the state. At the same time we are bound to say, that we are under greater obligations to Bengal, than to any other province in India; and that less has been expended on it.

In this very district of Burdwan, a state of things existed not very long ago, which would be a disgrace to any province, however distant from the capital, and therefore the more to be deplored when so near to Calcutta. Such a state of things would be put an end to by the plan we propose. With these outrages and disputes we are not unacquainted, but at present we do not wish to touch upon them. We simply allude to them, as to facts with which our readers must be well acquainted. It is sufficient for our purpose, that such disputes do exist, and have existed for several years, and that the sooner they are put an end to the better. We have not the slightest doubt, that our present Governor-General will give his attention to the case, as soon as the affairs in the North-west permit him. There is no man in India more competent than himself to understand the nature and value of the property in dispute, and its paramount importance to the community at large.

Second to the Burdwan, we must place the Chirra Púnji coal. Superior to it in quality, as we can ourselves bear testimony, it is inferior in commercial importance. We have seen the mine, a vast seam of coal excavated on the side of a hill, within a mile, or a mile and a half, of the station of Chirra Púnji. We have rejoiced on many a cold day in its genial blaze, and wished that it were nearer to Calcutta. But there we fear it must remain, till Assam shall again become what it once was, and till steamers shall be required on its broad and mighty stream.

A tram road of a few miles would convey this coal to the stream which runs past Pundua; whence its conveyance in boats to the bank of the Brahmapútra would be at all times easy. But at present the demand for it there is not great; and its distance from Calcutta would, in spite of its superior qualities, prevent its competing successfully with the coal from Burdwan. It is possible, however, that this coal

could be supplied at such a cheap rate on the Brahmaputra, as to enable the Government Steamers to pay their expenses. At present it is well understood, that they do not pay; and that it is solely with a view to future benefit that the boats have been put on that line. The Chirra Pūnġi coal therefore should not be lost sight of. The expenses of a tram road should be ascertained, and the quantity of coal, that is, or might be, used for steam purposes on the Brahmaputra, might easily be calculated. With these data the question of steam navigation on the Brahmaputra would be at once determined. It is supposed to be already settled that steam navigation will benefit the whole of our North Eastern frontier provinces. With coal at a certain fixed price, that navigation might be made to pay. The question then remains—will the expenditure of such a defined sum procure a permanent supply of coal for such navigation at such a fixed price? This question being answered in the affirmative, the Court of Directors have merely to consider whether they will pay that defined sum for the presumed benefits to those provinces.

Coal is also found in Assam itself in several places. At Jaipur there is very fair coal, but it appears not to be in any mass. The beds are much broken and distorted, so that a vein is soon worked out, or cannot be followed. About three years ago, the pits presented such an accumulation of rubbish, that nothing could be distinctly made out. At that time a seam was being worked 8 or 10 feet deep, which was apparently good, though much broken. The parties employed in working, having little knowledge of the subject, could not distinguish between the good and bad coal, and sometimes supplied their customers with villanous shale. At other times the coal was excellent. The contract with Government at Gowhatti is now, we believe, six annas a maund deliverable there; at this rate, if all the coal were good, neither the Government nor the contractors could object to the price. But the bad coal sent is likely to make it a losing concern to both parties. The contractor will lose, as the Government will refuse such inferior qualities; and the Government will lose their advances, if the contractor is unable to pay. The system, on which the mines have been hitherto worked, may be estimated from the significant fact, that one of the parties, who had undertaken the search, went to Assam without any capital, hoping to find coal ready to his hand, and to have only to help himself. Under such circumstances, it required no great prescience to foretell, that, with his own unaided resources, he could not suc-

ceed. After two years of unsuccessful search for a profitable vein, he left Assam, as poor as he arrived. Had he been properly supported, he might have succeeded. The old cry is, that there is no money, and that Government, whose duty it is, will go to no expense in making experiments, or in paving the way for making experiments, by opening good roads. On the banks of the Dikho, coal is also found in a much more favourable situation. It is not far from Sibsagar. This mine has been worked for a short time, and the coal proved excellent; the attempts to work it were, however, not brought to a satisfactory result, for little or no capital was expended. From either of these places, it is probable, that coal of good qualities could with proper management be obtained in sufficient quantities, and at a rate, which would cause steam navigation to be eventually remunerative on the Brahmaputra.

There is little question that this subject deserves the most anxious consideration. The future welfare of India depends on the manner in which such questions are now treated. A long course of prosperity, or an anxious train of indefinite evils, is extended before us. Shall we imitate the easy and lawless rack-renting Irish landlord, spend and squander now what we have, and leave the future to Providence? or shall this Government imitate the noble and patriotic spirit of the Duke of Bridgewater, who deserves to be immortalised for the example which he displayed?

The coal found near Kuruckdeah—about sixty miles inland from Suraajgurra,—will probably turn out to be of more importance for the purpose of steam navigation on the Upper Ganges, than that of any of the previously mentioned sites.

This coal had been noticed many years ago, and again lost sight of. Last year, however, the field was visited by several persons in the Government survey; and a full report on the subject, with maps and sectional drawings of the country around, has been, or is about to be, laid before Government. A considerable quantity of this coal has likewise been sent down for trial, and, we believe, favourably reported of; some was better, and some worse than the average of Burdwan coal: and nothing more than this could be expected from any sample of coal selected, as this must have been, from the surface. An officer from the Steam Department has also been sent up to survey, and to ascertain the practicability of opening a water communication. A small stream runs from the hills to the northward of the district containing the coal, which might be made practicable for small boats for twenty or thirty miles. This is all that has been done at present: and these

are facts with which any one is, or may be, acquainted. More will doubtless be disclosed, when the reports and plans that have been prepared, or are being prepared, for the Government, shall be made public. They are as yet in an unfinished state, and will, doubtless, from the known liberality of Government, be laid before the public, as soon as any measures have been decided upon. But we would presume earnestly to recommend, that, if the Government propose to throw open this, or any other, coal field to the public, it should itself construct the road (which should be a good tram road) and thus have a check over the working of the mines. The Government is far more interested than any private person in obtaining cheap coal, as it has the largest number of steamers on the Upper Ganges, and therefore the most at stake.

Coal now costs the Government, for the supply of their steamers on the Upper Ganges at all stations, say above Culna, twelve or fourteen annas a maund all round. This is Burdwan coal. Now the coal mines at Kuruckdeah can produce, as is stated by those who have examined them, a finer coal than the Burdwan. Presuming however the two descriptions of coal to be similar, and equal in heating power, the Kuruckdeah coal from its situation must be infinitely cheaper than the Burdwan. Supposing that Government should make a tram road for the Burdwan coal field, and another from Kuruckdeah to Sûrajgurrah, the former coal would have to be carried up stream the whole distance. That carriage now amounts to eight annas, taking the stations all round; and this must continue the same, no matter at what rate the coal could be supplied in Calcutta. For, could the coal now be supplied in Calcutta at three annas per maund, (which we presume it easily could, by a good tram road) it would still be necessary to drag it up stream 4, 5, and 6 hundred miles, according to the distance of the various steam stations from Calcutta.

The coal thus carried must also be conveyed in country boats, and at very slow rates. The loss of coal by this means of carriage is very great—so great indeed, that on the whole not much more than fifty per cent. of the coal sent from the mines reaches its destination in a good state, fit for steam purposes. The coal from Kuruckdeah would have none of these difficulties to contend against. A comparatively short tram road of sixty miles, over a fine open country, would bring it direct from the mines in a few hours in the best possible state to the centre of the line of steam navigation, where the coal is now most expensive.

As to the total extent of our resources in coal, there is every reason to believe, that the coal fields in Burdwan formerly extended all over the space now occupied by the Rajmehal hills. Coal is found in many detached situations on those hills. The probable former extent of this vast coal field can now only be conjectured, but what remains is amply sufficient for all the wants of the present age. Nature is far more liberal than we usually suppose; nor shall we be in a position to judge of the extent of the supply furnished for us, until shafts are sunk of a sufficient depth to penetrate through the coal seams, and reach the strata of rocks beneath, which line the basin-like cavities, in which the coal was originally deposited. As its value depends on its mineral composition, it is necessary to bear in mind, that the Welsh or Anthracite coal, which was at one time, from its uninflamable nature, considered unfit for steam purposes, has now been found to be very valuable. The causes of the formation of anthracite are highly interesting; and a very good description of the anthracite coal beds in North America is given in Lyell's *Travels* in those parts. We make no apology for inserting it, more especially as the two places bear a distinct resemblance to each other. The coal fields in Burdwan, and to the northward and westward, with the Rajmehal hills rising up at one edge of the field, may be compared with the gigantic coal-field of Pennsylvania, Virginia, and Ohio—with the Alleghany mountain range protruding through one side of the field, and converting its bituminous coal into anthracite. The North American field extends continuously from north-east to south-west for a distance of 720 miles, its greatest breadth being about 180 miles. Its area thus amounts to 63,000 square miles. The coal is of two kinds, bituminous, such as is in general use, and anthracite, or debituminised coal, which is a natural coke, deprived of its gaseous matters by subterranean processes. This anthracite burns without smoke or flame, does not soil the fingers, is not easily broken, and has a metallic or ringing sound, when struck. It is found in various degrees of purity, containing from 3 to 16, or even to 25 per cent. of inflammable matter. The most thoroughly debituminised portions of the field are those most intimately associated with the Alleghany mountains, thus pointing to the subterranean fires by which the bituminous materials were expelled: and, as the field recedes from the mountains, it gradually becomes more and more bituminous, till it cannot be distinguished from ordinary coal. For a long time this anthracite was rejected; but science has taught its use to the Americans, to whom, for countless ages, it will be an indispen-

sable source of wealth and comfort. In speaking of its use at Postville, Mr. Lyell says, "Here I was agreeably surprised to see a flourishing manufacturing town, with the tall chimneys of a hundred furnaces, burning night and day, yet quite free from smoke. Leaving this clear atmosphere, and going down into one of the mines, it was a no less pleasing novelty to find that we could handle the coal without soiling our fingers.

"The strata of coal, to the westward of the Alleghany mountains, are horizontal, but become more and more inclined and folded, as we proceed eastward. When level and unbroken, it is most bituminous; and becomes progressively debituminised, as we travel south-eastward towards the more bent and distorted rocks.

"Thus in the Ohio, the proportions of hydrogen, oxygen, and other volatile matters, range from 10 to 50 per cent. Eastward of this line, on the Monongahela, it still approaches forty per cent., when the strata begin to experience some gentle flexures. On entering the Alleghany mountains, where the distinct anticlinal axes begin to show themselves, but before the dislocations are considerable, the volatile matter is generally in the proportion of eighteen, or twenty, per cent. At length, when we arrive at some insulated coal fields, associated with the boldest flexures of the Appalachian chain, where the strata have been actually turned over, as near Potsville, we find the coal to contain only from six to twelve per cent of bitumen, thus becoming a genuine anthracite.

"It appears from the researches of Liebig and other eminent chemists, that when wood and vegetable matter are buried in the earth, exposed to moisture, and partially or entirely excluded from the air, they decompose slowly, and evolve carbonic acid gas, thus parting with a portion of their original oxygen.

"By this means, they become gradually converted into lignite, or wood coal, which contains a larger proportion of hydrogen, than wood does. A continuance of decomposition changes this lignite into common, or bituminous, coal, chiefly by the discharge of carburetted hydrogen, or the gas by which we illuminate our streets and houses.

"According to Bischoff, the inflammable gases, which are always escaping from mineral coal, and are so often the causes of fatal accidents in mines, always contain carbonic acid, carburetted hydrogen, nitrogen, and olefiant gas. The

‘ disengagement of all these gradually transforms ordinary, or  
 ‘ bituminous, coal into anthracite, to which the various names of  
 ‘ splint coal, glance coal, culm, and many others have been  
 ‘ given.

“ We have seen that, in the Appalachian coal fields, there is  
 ‘ an intimate connection between the extent to which the coal  
 ‘ has parted with its gaseous contents, and the amount of dis-  
 ‘ turbance which the strata have undergone. The coincidence  
 ‘ of these phenomena may be attributed, partly to the greater  
 ‘ facility afforded for the escape of volatile matter, when the  
 ‘ fracturing of the rocks had produced an infinite number  
 ‘ of cracks and crevices; and partly to the heat of the gases  
 ‘ and water penetrating these cracks; when the great move-  
 ‘ ments took place, which have rent and folded the Appalachian  
 ‘ strata.”

From theory it might thus be presumed, that anthracite coal would be found in the Rajmehal hills: and specimens, said to be anthracite, have been already sent to Calcutta.

It is necessary to notice in this paper, that the efforts of Government have been frequently sadly misdirected in their attempts to introduce and obtain good coal. At page 90, of the Coal Committee's reports, we find the committee recommending that, in consequence of the superior quality of the Chirra coal, the mines should still be retained in the possession of Government. This was in 1841: and, since that date, Government has done nothing to improve the working, or to facilitate the means of access to, or transit from, those mines. It is not the province of Government to work coal mines, nor is it ever for its advantage to retain them in its own possession. Unworked, they are of no more value than the Irishman's service of plate, which he knew was at the bottom of the sea. Instead of keeping such property in its own hands, it should be the object of Government to afford every facility for the speculator to invest his capital in working them.

When will Government learn that things are worth just what they will fetch in the markets; and that, if the exclusive right of working many of its seams of coal and suppositious collieries could be sold to-morrow, it would not fetch one shilling in the London Market? Who would purchase that which is untried, unexperimented on, and unknown? What speculator so daring as to lay out lakhs of rupees on the fields of coal on the Nerbudda, or in the Caribari hills in Assam? Yet of these latter, in page 71, of the Coal Committee reports, we find the members of that Committee anxious to secure

leases, although, in the same paragraph, they describe the mineral as a dull earthy coal.

The efforts of this committee appear to have been directed so as to secure to Government every spot of land, where it was possible, or likely, that coal could be worked: and the sums expended in this useless manner could not have been inconsiderable. By this means speculators were driven out of the market, and the trade of the country injured to a great extent.

But this is not the only injurious measure which the Government has adopted. Under the impression that coal, even when not worked by it, was something, which ought to yield revenue, the extreme measure of taxing it at the mouth of the pit, to an amount equal to the cost of raising it, has, in some instances, been resorted to. In one instance which has been brought to our notice, it was ascertained that the cost of raising the coal would average about 2 pice per maund; and, when the leases of the land were prepared, the Government endeavored to impose a tax of two pice on every maund that should be raised. This suicidal measure would, were it established, at once destroy all mining in Bengal; and if the attempt to impose it had not been well ascertained by us, we could scarcely have believed it credible. Would, for instance, England with all its mineral wealth be able to pay a tax, equal in round numbers to upwards of eight millions sterling for its coal? This would be the result of such a tax universally imposed in England, the average price of coal at the pit's mouth being rather more than eight shillings per ton; and the consumption being now above 20,000,000 of tons, besides what is exported. "*Nothing*," says the Edinburgh Reviewer, "*but the pressure of the most overwhelming necessity could ever justify the imposition of a duty on so indispensable an article as coal.*"

As connected with this subject, we must also remark, that instruction in economic geology has been but too little attended to in India. Coal is but one branch, though doubtless a most important one, of a distinct science. In a country so little known as India, the knowledge of this science is of the greatest value. Up to the present hour, however, although the question has been often entertained, yet no geological professor has ever been appointed in any of the Government schools, or colleges.

An hereditary contempt for practical economic geology appears to have been derived from our native land. A writer, in the last edition of the *Encyclopædia Britannica*, in an article on mining, complains that no public means have been employed,

even in England, for general instruction in this important science, and that the schools on the continent are far ahead of us in this respect. As the subject is important, we give the extract entire :—

“ The advantage to be derived from a knowledge of well established facts, respecting the arrangements and distribution of mineral substances, will be best illustrated by examples of the errors and oversights, committed where this knowledge was wanting. It is generally known, that for some years lime was exported to New South Wales, where it exists in abundance in its natural state. In Cornwall, ore of silver and cobalt were, until recently, thrown away from a mine, which has since the discovery of their value, returned upwards of £10,000 a year from these ores; and in the same county, although celebrated for its tin mines from the earliest periods of history, yet, until last century, the ores of copper were employed only to repair the roads. Wherever the copper appeared in a lode, it was a common expression that the ore came in, and “spoiled the vein;” and, even in the present day, but little attention is paid to whatever is not manifestly either tin, or copper, or known to yield these metals.

“ In Derbyshire, although lead has been smelted from the common blue ore, ever since the time of the Romans, the other ores of the same metal were never thought of, but left in heaps as rubbish; yet we have lived to see a public road, made and repaired with these rejected ores, actually taken up and smelted to good account. As to the practical miner, he is altogether the creature of habit, holding geology in but little estimation, and smiling at the nice distinctions of the mineralogist. Hence, if any inquiry be made of him respecting the interesting phenomena of veins, he generally prefers the theory of his forefathers, to that which has been deduced from the results of more recent and accurate investigations.

“ In this country no public means have been employed for removing ignorance, and counteracting prejudice in regard to the working of mines. But the case is different on the continent. Both France and Germany possess national institutions for facilitating the study of the science applicable to mining operations; and the advantage of such a course of education is sufficiently demonstrated by the fact, that the companies, formed for working mines in South America and Brazil, have given a decided preference to officers trained in the schools of France and of Germany. Besides, of all speculative employments, mining is perhaps the most uncertain. Expense

‘ and ingenuity are frequently baffled ; the most promising appearances often end in disappointment ; whilst from veins, which some persons have abandoned in despair, others have frequently derived enormous profits. This very uncertainty, however, only affords another argument for concentrating all the lights of science, in order, as far as possible, to lessen the risk of disappointment, and to afford the miner some surer guide than chance, or caprice, in pursuing his exploratory labours.”

Since that article was written much has been done in England by the labours of many eminent men, such as Buckland, Murchison, Johnston, and others : and museums of economic geology have been established in many places.

In India, however, we are lamentably behind hand. The utmost that has been done is the employment of a few persons on the Geological Survey : but in the way of instruction nothing has even been attempted. But here, from the deadly nature of many parts of the country, no proper survey can ever be made without well-trained native assistants : and the first thing to be done, is to train them. The Government, therefore, cannot too soon provide establishments for facilitating the study of the science of Geology. By training up a portion of the native youth, it will, with their assistance, be enabled to lay open to the public the mineral wealth of the country, which may in after years prove a fertile source of revenue.

An institution for the instruction of the natives in the arts of mining, and for teaching them how to distinguish the various ores and minerals, and the process of roasting, fusing, smelting, &c., as far as these subjects can be taught in a school, would be a great addition to the present system of Government education in Calcutta. We trust the subject will not be lost sight of ; nor do we despair of seeing it accomplished during the time of our present Governor-General.

So great is the practical ignorance often displayed, that Mr. Bakewell states it as a positive fact, that, under the present slovenly method of working coal mines in England, more than two-thirds of the coals are wasted. Knowledge is certainly profitable to direct, and without it nothing can prosper. We therefore venture to hope, that something will soon be done to train up the native youth in India, to instruct them in this science in all its branches, and to explain to them the vast importance of it, so that the mineral wealth of this country may be by them practically and scientifically explored.

#### NOTE ON TRAM ROADS.

In Stevenson's Civil Engineering of North America, the fol-

lowing plan is given by him, as proposed by Mr. Robinson, for the superstructure of the Philipsburg and Juniata Railroad.

" Sills of white or post oak, seven feet ten inches long, and twelve inches in diameter, flattened to a width of nine inches, are to be laid across the road, at a distance of five feet apart from centre to centre. In notches formed in these sills, rails of white oak or heart pine, five inches wide, by nine inches in depth, are to be secured, four feet seven inches apart, measured within the rails. On the inner edges of these rails, plates of rolled iron, two inches wide, by half an inch thick, resting at their points of junction on plates of sheet iron, one-twelfth of an inch thick, and four and a half inches long, are to be spiked, with five-inch wrought iron spikes. The inner edges of the wooden rails to be trimmed slightly levelling, but flush at the point of contact with the iron rail, and to be adzed down outside the iron to pass off rain-water.

" Such a superstructure as that above described would be entirely adequate to the use of locomotive engines of from fifteen to twenty horses power, constructed without surplus weight, or similar to those now in use on the little Schuylkill Railroad in this state (Pennsylvania), or the Petersburg Railroad in Virginia; and it will be observed, that only the sills, which constitute but a very slight item in its cost, are much exposed to the action of those causes, which induce decay in timber. It is particularly recommended, for the Philipsburg and Juniata Railroad, by the great abundance of good materials, along the line of the improvement, for its construction, and the consequent economy with which it may be made.

" The following may be deemed an average estimate of the cost of a mile of superstructure as above described :

	Dollars.
1056 trenches, 8 feet long, 12 inches wide, and 11 inches deep, filled with broken stone, at 25 cents. each, .....	264
Same number of sills, hewn, notched, and embedded, at 50 cents. each, .....	528
10,912 lineal feet of rails (allowing 33 $\frac{1}{3}$ per cent. for waste), at 4 cent. per lineal foot, delivered, .....	436 48
2112 keys at 2 $\frac{1}{2}$ cents each, .....	52 80
10,560 lineal feet of plate rail, 2 inches by $\frac{1}{2}$ inch, weight (3 $\frac{1}{2}$ lbs. per foot,) 15 $\frac{11}{16}$ tons, delivered at 50 dollars (£.10) per ton,...	785.50
1509 lbs. of 5-inch spikes, at 9 cents. per pound,.....	135.81
Sheet iron under ends of rails, .....	30.21
Placing and dressing wood, and spiking down iron rails, .....	240
Filling between sills with stone, or horse-path, .....	180

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2692.80

In all 2692 dollars, or about £.510.

Taking this plan, as a basis of our calculation for an iron tram road we would calculate the expenses thus:—

	Rupees.
1056 trenches, 8 feet long, 12 inches wide, and 12 inches deep, and filling with broken hard burned pieces of brick.....	400 0 0
1056 sills of teak wood, prepared with tar, 6 feet long, and 8 inches square, at 3 rupees each .....	3,168 0 0
10,560 lineal feet of rails of teak, 5 inches wide, by 7 inches deep, at 1 annas per foot.....	2,510 0 0
2112 keys .....	120 0 0
10,560 lineal feet of plate rails, 4 inches, by $\frac{1}{2}$ an inch .....	3,200 0 0
1509 lbs. of 5 inch spike nails .....	150 0 0
Sheet iron under ends of rail.....	60 0 0
Placing and dressing wood, and spiking down iron nails .....	100 0 0
Horse path, or Foot path .....	100 0 0
	<hr/>
	9,938 0 0

This gives in round numbers 10,000 rupees per mile. It will be seen that we have slightly modified Mr. Robinson's plan, and doubled the breadth of the plate rail, making it 4 inches wide, instead of 2, and reduced the scantling of the timber, which is so much more expensive here than in America.

We have also made the width between the rails only five feet, which might be considered too narrow, though, it greatly tends to strengthen the road; and a road of that width would answer the purpose. As the specific gravity of coal varies between 1,270 and 1,300, from 74 to 80 lbs. is the varying weight of a cubic foot of that mineral; 75 is the common weight. A mass of 30 cubic feet equals one ton very nearly. A cart therefore, 20 feet long, by  $3\frac{1}{2}$  feet broad, and 3 feet deep, would contain a space of 210 cubic feet, and carry 7 tons of coal, if in one mass. But coal, when broken, occupies a much larger space than when in one solid mass. Thus a ton of coal, broken into moderate sized pieces, would require 45 cubic feet, and, if broken very small, it would even take up the space of 50 cubic feet. A cart, as described above, therefore, would always carry 4 tons with ease; and, if on 8 wheels, this would give a pressure of half a ton on each wheel, independent of its own weight, and the eighth of the weight of the body of the cart or waggon. A road, such as we have proposed, would sustain this pressure without much wear and tear of the materials; but we would allow 500 rupees per mile for annual repairs. A charge of only 2 pice per maund on 32 lakhs of maunds of coal would give a lakh of rupees for this article alone; which should be sufficient for the repairs of the road, for the pay of the establishment, and for the cost of the transport.

ART. VI.—1. *Papers relating to the Punjab. 1817—1849.*

2. *Annals of India for the the year 1848. An outline of the principal events, which have occurred in the British Dominions in India from 1st January, 1848, to the end of the second Seikh War in March 1849. With a prefatory notice of the circumstances which led to our connection with the Punjab. By George Buist, L.L.D., F.R.S. L. & E., F.G.S., &c.*

WE have been anxious to present our readers at the earliest period with a brief and connected narrative of the most important events of the second, and we trust the last, Punjab war, which commenced with the assassination of our political officers at Múltan on the 19th of April, 1848, and terminated with the re-capture of Peshawur by Sir Walter Gilbert on the 16th of March, 1849. We felt, however, that any such notice of this eventful and important campaign would be premature, before the appearance of the Parliamentary Punjab Blue Book, for which we have, therefore, postponed the present article. One of the works, mentioned above, the *Annals of the year 1848*, compiled by Dr. Buist, the Editor of the *Bombay Times*, gives a very clear and accurate account of the progress of political and military events during the campaign, and will furnish the future historian with much valuable data for his labours. The utmost confidence may be placed in this work for the accuracy of its details; but this is not its sole merit. Some of the most remarkable transactions of the campaign are depicted with such vigour and animation, as at once to place the reader in the midst of the scenes. Indeed, we have seldom read any thing more vivid and interesting than Dr. Buist's description of the investment of the Fort of Múltan—one of the most remarkable events in the military history in India, whether we look at the resources, the skill, and the energy of the besiegers, or the noble resolution of the besieged. Unfortunately, however, these "*Annals*" were put to press before the Punjab Blue Book reached India, and the author was, therefore, unable to avail himself of the rich sources of information, which that work affords. It has been usual to mistrust these Parliamentary records, as having been compiled to subserve a political purpose, and not to support the cause of truth. The official functionary, entrusted with their compilation, has been repeatedly charged, and not without apparent justice, with having suppressed some of the most important documents. The present Book is equally remarkable for the fulness and the deficiency of its revelations.

All the most interesting transactions, in which the subordinate agents, Edwardes, Taylor, Nicholson, Herbert, Abbott, and Lawrence, were engaged, and in which they have earned so splendid a reputation are given at full length. We are enabled day by day to trace their progress, to appreciate their difficulties, and to mark the talent and resolution by which they were met and overcome. We have no such record of the events of any other Indian campaign: and it would almost appear as if the compilation were intended to be a monument of their exertions. For, as soon as the Commander-in-Chief takes the field, the record becomes scanty, dry, and uninteresting. All those documents, which would have enabled us to trace the latter events of the campaign up to their source, and given us a clue to the sentiments of Lord Dalhousie and Lord Gough, regarding the various disappointments, which commenced at Rannuggur, and terminated with the victory at Gúzerat, are carefully, and, we suppose, not undesignedly, withheld; and in their stead we have a mere reprint of the political documents, and the military despatches, which have already appeared in the public journals. For an elucidation of the latter portion of the campaign, we must, therefore, be content to wait, until some fortunate circumstance shall unfold the real nature and progress of these events. The narrative, which we now present to our readers, has been compiled from the two works, of which the titles are placed at the head of this article.

Sawun Mull had been appointed, in the time of Runjít Singh, to the government of the city and province of Multan, in the South West of the Punjab, which yielded an annual revenue of about thirty-five lakhs of Rupees. At his death, the administration of the district passed into the hands of his son Múlraj, subject to little more than a nominal dependence on the authorities at Lahore. Sawun Mull had been accustomed to pay seventeen lakhs and a half of Rupees yearly to the paramount power in the Punjab: but on his death, Lall Singh, who was then in power, demanded an immense Nuzrána (feudal fine) on the transfer of the powers of government into the hands of Múlraj. After considerable discussion and difficulty on the part of Lall Singh, whose avarice had been stimulated by the report of Sawun Mull's immense wealth, this demand was commuted for one of eighteen lakhs, which Múlraj agreed to pay within a certain time. Owing, however, to the disorganization into which the country soon after fell, this agreement was never fulfilled: but, on the re-establishment of the durbar by British influence, the claim was renewed, and Sikh troops were despatched to coerce the Dewan. These were, however, defeated

by him ; and he then prayed for the interference of the British Resident to adjust the accounts. Mr. John Lawrence, who at that time held this important office for his brother, promised him a safe conduct to Lahore and back again, and succeeded in arranging the disputed questions, in a manner equally satisfactory to the durbar, and to the ruler of Múltan. Múltraj consented to pay down eight lakhs at once, and the remaining ten by regular instalments ; and, moreover, agreed to surrender a district producing eight lakhs a year of revenue, and to add two lakhs to his annual payment to the durbar. During this visit, the Dewan expressed a wish to resign the important post he held ; for which he assigned two distinct reasons. The new fiscal arrangements, which Sir Henry Lawrence had introduced into the Punjab, were far less oppressive to the people than those which prevailed at Múltan ; and Múltraj declared that he could neither adopt a similar system, nor suffer his own to continue, as the one would destroy his revenue, and the other produce discontent among his subjects. The second cause was the failure of his own health, and family dissensions, which destroyed his peace. It appears also that Múltraj had a great dread, lest complaints from his subjects against himself should be listened to, as well as a vague terror of the Adúls, which were then in course of establishment all over the country. At length, however, he returned to Múltan, without having settled the question of his resignation, and with the understanding that he would retain his Government for another year. On the arrival of Sir F. Currie at Lahore, the Dewan wrote to him that he was willing to abide by the agreement, which Mr. Lawrence had made with him, to the effect, (as he alleged), " that his honour and dignity should be guaranteed ; that no charge against him should be listened to ; that he should only be required to give in one year's papers ; and that a suitable provision should be made for him during the remainder of his life." All this was of course without foundation : but, on the receipt of another letter from Sir F. Currie requesting an explanation, he distinctly expressed his wish to resign his government, without making any other stipulations, than such as regarded the saving of his honour in the eyes of his own people. The durbar, immediately after the perusal of the document in which these wishes were expressed, appointed a successor in the person of the Khan Singh Man, a good soldier, and of popular manners. The Sirdar was intended to be merely the Governor, and not the Nazim, of the province : and it was resolved that he should receive a fixed salary of Rs. 30,000 per annum. Mr. Agnew, a Civilian, who had become favorably known to the

Government for his intimate acquaintance with the language and manners of the natives, was nominated to the office of Political Agent at Múltan; and Lieut. Anderson, a good oriental scholar, was chosen as his assistant. Khan Singh was instructed by the Resident to be guided, in the administration of the province, by the advice of Mr. Agnew, "on all occasions, and in the conduct of duties of every department;" the signification of which was, that the entire charge of the administration should rest with that gentleman, while the native Sirdar was the ostensible instrument of Government. They took their departure from Lahore on the 6th April, with an escort of 350 Sikhs, and a few guns, and reached Múltan on the 17th. Much objection has subsequently been raised to the smallness of the escort, by which these officers were accompanied, but without any adequate reason. The British authorities had not the slightest idea of the determination formed by Múlraj, if such existed; and they were but partially aware of the lingering hate entertained towards the British dominion by the Khalsa soldiery. Under ordinary circumstances, such a body of troops, of proved courage, and presumed fidelity, would have been regarded as amply sufficient for the escort of two officers, about to receive the keys of a fort from a governor, who professed implicit submission, and whose professions there had been as yet no reason to disbelieve.

Múlraj himself had always been regarded by the British authorities, and particularly by Mr. John Lawrence, as a fair specimen of an Asiatic ruler; and Mr. Agnew remarked, on his arrival, that the quiet aspect of Múltan had not belied the accounts which he had heard of its excellent order and arrangement. On the 18th, the Dewan paid a visit to the Englishmen, who had taken up their quarters in a mosque in the Eedgah, on the outside of the town, and held some discussion, as to the terms upon which the surrender of the fort was to be made. He wished to receive a regular deed of acquittance, without the production of more than one year's papers: but to this Mr. Agnew would not consent, and demanded all the documents for the last six years. Múlraj at last agreed to produce them; but he went away with a saddened face, and an angry flush upon his brow. When we remember what the accounts of an Asiatic prince really are; the discrepancies between those which he keeps for himself, and those which he sends to his superiors; and the endless train of deceit practised by the best of their number in the settlement of revenue; we must acknowledge there was enough, even in this just and reasonable demand, to raise considerable emotion in the mind of a man, who had enjoyed

supreme power for four years. Add to this, that Múlráj was a childless man, at war with all his own relations, and hating his superiors ; and we have little difficulty in accounting for his subsequent proceedings, without supposing, as some have done, any pre-meditated revolt,—a supposition, which is completely disproved by the collection of papers, which we have placed at the head of this article.

On the following day, the 18th, Múlráj came to show Mr. Agnew, his assistant, and the new governor, over the fort, and to surrender into their hands the government of the province, which he and his father had so long swayed. On arriving at the entrance, he requested them to dismiss a portion of their guard, as it would be inconvenient to be followed by such a crowd. The wish was complied with ; but a similar wish, expressed by the Englishmen to Múlráj, in regard to his own disorderly soldiery, was evaded on some unmeaning pretext. The whole of the interior of the fort, declared by Lieut. Anderson to be the finest in India, was exhibited to the officers. On the return of the cavalcade, Múlráj rode first, side by side with Mr. Agnew ; and Khan Singh, with Lieut. Anderson, followed a few paces behind. As they passed over the drawbridge, a sepoy struck at Mr. Agnew with a spear, and wounded him in the side. Múlráj immediately galloped away to his own house in the Am Khas, and abandoned the officers to their fate. The same sepoy then made another rush at Mr. Agnew, and wounded him so severely, that, after breaking the villain's head with a stick which he held in his hand, he fell to the ground. Other sowars, Mussulmans, then attacked Lieut. Anderson, and severely wounded him in the neck and other places. Two of his attendants, named Salabut and Rungram, then raised Mr. Agnew, bound up his wounds, and placed him on an elephant to return to the Eedgah. Another party also carried Lieut. Anderson on a mattress in the same direction ; while the assailants, apparently alarmed at their own deed, withdrew within the fort, and towards Múlráj's own residence. As the officers passed the Am Khas, they perceived that artillerymen were bringing out guns ; and, before they reached the Eedgah, a ball passed over their heads. On arriving at the mosque, Mr. Agnew despatched a messenger to Múlráj, declaring that he acquitted him of all share in the tumult, but that he must come to the Eedgah, and explain the circumstances. The Dewan's Múnshí returned with the reply, that his master would certainly make his appearance in the course of the night, and satisfy Mr. Agnew of his innocence. Meanwhile, that gentleman despatched a report of these events to Sir F. Currie, in which he evidently considered the whole

affair to have arisen from one of those tumults, which so frequently spring up among an Asiatic soldiery. All that night the Dewan was expected, and all that night Khan Singh and the other native officers continued to reiterate their conviction of his treachery. On the morning of the 20th, a brisk fire commenced from the fort upon the Eedgah, and was replied to by the pieces which had accompanied the escort from Lahore, and which were now mounted and served on the south side of the mosque. The firing continued on both sides till towards evening, when the commandant of artillery, Esra Singh, who had been for some hours in communication with Múlraj, with all his men, went over to the enemy. The Gúrkha soldiers had changed sides before; and the officers were now left to be protected by múnshís, clerks, and the sirdars themselves. At night, under cover of the darkness, an armed rabble, yelling for blood, poured in on the north, south, and west sides; and the Englishmen were savagely murdered, after shaking one another by the hand, and expressing with their last breath the certainty that their fate would be fearfully avenged. Khan Singh received quarter, and was thrown into prison; while the rest of the attendants were taken into the service of the Dewan, who promised them the pay, which they had enjoyed during the reign of Runjít Singh.

Intelligence of the tumult reached the Resident at Lahore on the 21st; and he immediately took the most energetic measures to avert all danger from the officers, if it were possible, and, if not, to avenge their fate. All the disposable troops of the Sikh army, in any way available, were ordered to march on Múltan, within twenty-four hours. A large British force was also ordered to hold itself in readiness for embarkation on the Raví, by which it was proposed to reach Múltan. Another letter, however, from the Bhawulpúr news-writer, furnished Sir F. Currie with fuller information, and compelled him to alter his original determination. He saw at once that the Sikh soldiers were utterly untrustworthy, and that, if the proposed force were despatched, they would, in all likelihood, take the earliest opportunity of coalescing with Múlraj, and attacking the accompanying British force. The durbar expressed their opinion that the soldiers could not be relied on to oppose Múlraj. Under all these circumstances, and influenced by these considerations, the Resident, on the 25th of April, informed General Whish, that the British column would not be moved. On the 27th of April, he wrote to the Commander-in-Chief, and expressed, in the most urgent terms, his desire, that a British force, sufficiently large to reduce Múltan, should be at once despatched. It was repre-

sented to his Lordship, that the troops would be able to go down the Ravi as far as Bhawalpúr Ghat, and within forty miles of Múltan : that they would there receive ample supplies, and be enabled at once to march upon their ultimate point of destination. The Resident stated, moreover, that the political necessity was exceedingly urgent; but that it remained for his Lordship, as Commander-in-Chief of the army in India, to determine on the military propriety of this step. His Lordship's reply is cool and decisive. The military movement is declared to be useless and inexpedient. Under these circumstances, the whole matter was referred to the Governor General.

In the mean time Lieut. Edwardes, (well known in India as the author of the admirable letters signed Brahminí Bull, which appeared in the *Delhi Gazette*,) an assistant to the Resident in Bunnú, had commenced a career of exploits equalled by few in the annals of Indian warfare. He was employed in settling the revenue of the country in the Derajat, and had with him a force, consisting of about 1,200 Infantry, 350 horsemen, two guns, and twenty zumbúruks. The men under his command were Pathans, who, however active in all affrays, had never seen a shot fired in anger. On receiving intelligence of the attack on the two officers, he determined to cross the Indus, and to move on Múltan to their assistance. On the 21th of April, he moved across the river with his whole force : but, hearing that they had been massacred, he marched to Leiah, an important town, and the capital of the Sind Sagor Doab. The Governor of the place, a servant of the Dewan, fled in alarm, and allowed Lieut. Edwardes to take quiet possession of it. Here he remained some days, awaiting the approach of the force, which, he felt assured, would be immediately despatched from Lahore towards Múltan. He calculated that the field brigade would positively be sent on the 24th of April, and that it would reach Múltan in ten days. No such force was despatched. Meanwhile, Lieut. Edwardes discovered, from an intercepted letter, that his head had been sold by his own men for 12,000 rupees, and their own services for as much more ; and that any advance towards the outposts of Múlraj would be the signal for an attempt on their part to fulfil the terms of the bargain. On the 29th, he heard that Dewan Múlraj had moved a force of between 4,000 and 5,000 men, with eight heavy guns, to oppose him. The advanced guard appeared about four coss from Leiah on the 2d of May, and Lieut. Edwardes summoned all his native officers into his tent, and informed them of his determination to re-cross the Indus, as it might be

dangerous to approach too near the enemy. The men, though mortified and enraged at his evident acquaintance with their designs, yet hesitated to seize him, either from a fear of ulterior consequences, or because they were aware that his personal guard would remain faithful to him at all hazards. He accordingly recrossed the river, and remained upon the opposite bank, to await the arrival of General Cortlandt, an officer in the service of the durbar, who came up, on the 4th of May, with a regiment of trustworthy Mussulmans, and six small pieces of cannon. The two officers then exerted themselves to the utmost to raise troops free from the infection of treachery, and contrived to add to their muster roll nearly 3,000 "bold villains, ready to risk their own throats, or cut those of every body else;" fitted for the kind of warfare then before them; neither burdened by fears nor scruples. Múlraj, deceived by a report of the departure of troops from Lahore, re-called his men from Leiah on the 7th of May; and Lieutenant Edwardes, aware of the importance of maintaining his ground on both sides of the river, immediately threw a strong picket into the town. On the 12th of May, his force was weakened one-half by the departure of General Cortlandt, who left him, in obedience to orders received from the Resident, which imperatively enjoined him to go and raise revenue to the southward. On the following day, intelligence was received that Múlraj, having recovered from his alarm, and having ascertained that his fears of a descent from Lahore were groundless, had detached a large body of cavalry to re-take Leiah. The cavalry picket, which had occupied the town, was immediately strengthened; and an attack, which was soon after made, was gallantly repulsed. The little band of scarcely three hundred horsemen, raised within the previous fortnight, to whom Lieut. Edwardes had assigned the defence of the position, pursued the enemy with such rapidity, that their leader, Jus Mull, only escaped destruction by concealing himself in a high tobacco field; thereby anticipating by three months the ever memorable expedient of the king of Munster. But it subsequently appeared that the object of the Dewan was, not so much to attack Leiah, as to cross the Indus below it; and a large body of nearly 6,000 of his troops moved down that river to a point below General Cortlandt's position, with the view of attacking him. On receipt of this intelligence from the General, Lieut. Edwardes determined to effect a junction with him. In pursuance of this project, he placed his infantry in boats, ordered his cavalry to proceed with all speed along the left bank, in half a night and a day effected a march of fifty miles, and,

pressing forward with the same ardour, rejoined General Cortlandt on the 20th of May. A small detachment was immediately pushed on, under the command of a native officer, to Dera Ghazi Khan, the possession of which was considered very important. The expedition succeeded beyond expectation. The combat lasted three hours, and the enemy was completely routed; but the most important result of this victory was the capture of thirty-nine boats, which had been collected to enable Múlraj's troops to cross the Indus. Lieut. Edwardes, however, began to feel that it would be impossible for him to maintain his ground with his raw levies against the increasing force of Múlraj, unless a diversion could be created in his favor by troops not likely to fraternize with the Dewan. He pressed the Resident to order the Nuwáb of Bhawalpur, whose fidelity (as well as that of his troops) was above suspicion, to take the field, and to keep Múlraj in check on the south-east. That ever faithfully engaged to take on himself the occupation of all the country between the Sutlej and the gates of Múltan. On the 23d of May, General Cortlandt moved down to Dera Gazi Khan. On the same day, Múlraj's force marched down to Koreyshí, opposite that town. His cavalry made a single march to that spot, in the hope of securing another fleet of boats, which had been collected by order of Múlraj. But Lieut. Edwardes had sent off a party, twenty-four hours previously, to anticipate this movement; and, when the rebel cavalry reached Koreyshí, they found that the boats were safely harboured in an island nullah beyond their reach. Lieut. Edwardes himself broke up his encampment at Peronwallah, and joined General Cortlandt at Dera Gazi Khan, on the 26th of May. He had now a fleet of seventy boats at his command, and was able to throw 6,000 men across the Indus; and he earnestly solicited the permission of the Resident to cross that river, and to co-operate with the Bhawalpur troops, in accomplishing the great object they had in view, of shutting up Múlraj in Múltan, till a British army should march against that place. On the 6th of June, he received the permission of Sir Frederick Currie to despatch General Cortlandt across the Indus, or to go himself, if necessary, for the support of the troops of Bhawal Khan; and he wrote back to the Resident, "The whole of my newly-raised Pathan levies are in just the temper that could be wished. War is their trade, and also their pastime; they like it. They have met with one or two successes at the outset, and are persuaded that the 'ikbal' is on their side; and my task is to restrain their impatience, which is a good omen, when hard blows are to the fore." On the 10th of June, orders were received from Múlraj for the whole of his force to quit

its encampment at Koreyshí, and march to oppose the Bhawalpur troops. That same day, Lieut. Edwardes put ten guns and 2,500 Pathians on board his boats, and began the passage of the Indus. The river was nine coss wide, and the whole force did not reach the opposite bank before the 14th of June. On the 13th of that month, the Resident wrote to Lieut. Edwardes, that Rajah Shere Singh's large force, composed of all the Sirdars in the Punjab, was at Chichawultun, ready to move towards Múltan: but, he added, "I dare not advance them to a point where there is a probability of collision with Múltraj's troops, till Bhawal Khan, or yourself, have gained some farther advantage over the Dewan and it becomes evident to all that the game is up with him. The whole Sikh army is faithless to the Mahajarah; a strong desire to aid Múltraj pervades all the soldiers."

It is difficult to conceive why, under such circumstances, Rajah Shere Singh's troops were allowed to proceed to Múltan at all; and this, indeed, appears to have been the great error of the first part of the campaign. It led to incalculable mischief in the end. On that same 13th of June, Lieut. Edwardes wrote to the Resident, that the Churrujít Regiment had deserted bodily to Múltraj: "The event is most unfortunate, and commences a new era altogether. It tears the veil from the whole Sikh army, and leaves them all to view as traitors." Lieut. Edwardes now moved on with his force towards the Chenab to join the Bhawalpur troops, and Múltraj became anxious to attack them before the junction. 3,000 of Lieut. Edwardes' men were pushed across the river during the night of the 17th, and he himself slept on the right bank, having resolved to cross with the next detachment. But, becoming anxious, he crossed over early in the morning of the 18th. On his arrival, he found that an attack was hourly expected; and he gazed on the scene around him with feelings, that amounted almost to dismay. The whole of the Bhawalpur forces, amounting to about 8,500 men, were in the worst possible state of disorganization. Clamour reigned supreme. Futtéh Khan, their commander, was under a tree, muttering prayers, instead of heading his troops, and every petty Sirdar was offering his excessively impracticable advice. Lieut. Edwardes, by great personal exertion, and the able assistance of Captain Macpherson, contrived to establish something like order. The firing was kept up on both sides till three in the afternoon, when Múltraj's troops turned their whole fire on the left. "The galling volleys, poured at this time on the new levies, were enough to shake older troops, and their impatience to be led on to strike a blow in their own defence was most difficult to restrain." It was an anxious moment. Lieut. Edwardes' guns

had not reached him. But at half past three, the two fresh regiments, and the guns, sent across the Chenab by General Cortlandt, arrived, and Lieut. Edwardes gave the long wished-for word to emerge from the jungle, and to fall upon the rebels. "I feel unable," says Lieut. Edwardes, "to do justice to the gallantry with which this order was obeyed. Men, whom I had only enlisted a month ago, shook their swords with a will, and rushed upon the rebel cavalry with the most desperate and irresistible valour. The fight was hand to hand in five minutes; and the opposing guns were pouring grape into each other almost within speaking distance. At length Múlraj's army gave way." So rapid and disorderly was the rout, that the greater part never halted, till they were under the protection of the guns of Múltan: and many, who were scattered over the country, never regained the fort. Eight guns were captured in this brilliant affair; and, what was of much more importance, the prestige of the enemy was irretrievably weakened. Múlraj had evidently considered that his troops were more than a match for the half-disciplined, and ill-armed levies of the two revenue officers; and his men were inspired with the same contempt, and went out to battle in the full assurance of victory. This defeat completely changed the current of their feelings. They found that, however equal their forces might be in number, they could not cope with the energy and military skill arrayed against them; and, in the second battle which occurred soon after, the alteration in their spirit was strikingly manifested.

At this time, however, a new and more imminent danger arose, which compelled the Resident to turn for a time his whole attention to the intrigues in the metropolis. The Maharani Jundakhore, the mother of Dhulíp Singh, had been concerned in every plot in the Punjab from the death of Runjít Singh, and was known to entertain the most decided hostility to the British rule, whatever form it might assume. She had, therefore, been placed in an honourable confinement at Sheikhúpur, and her allowance reduced to Rs. 4,000 a month. On the 8th of May, a rissaldar of Major Wheeler's Irregular horse informed his commanding officer, and through him the Resident, that efforts had been made to seduce him from his fidelity, and that a general conspiracy had been matured. It was stated, that the conspirators were accustomed to meet together, to the number of about twenty-five, to consult upon the measures to be adopted for the extermination of the hated Feringhís. The Resident laid a plan to arrest them in the act; but the news got wind, and he was obliged to content himself with the arrest of the principal conspirators. Khan Singh,

an unemployed general in the Sikh service, Kang Ram, the Maharani's confidential vakil, and two others, were arrested; and, their complicity having been fully and distinctly proved to the satisfaction of the Resident and his council, Khan Singh and Rung Run were executed within twenty-four hours, the third was transported, and the fourth pardoned on condition of giving evidence against his accomplices. He affirmed that the Rani was the moving spring of the whole plot; but that Shere Singh, Sheikh Emamuddin, and other Sirdars, were deeply implicated in it, and that the army, now on its way against Múraj, would join him in the end. The sepoys were to be induced by large gifts, and larger promises, to murder their officers; and then it was expected, that the English would be immediately driven out of the Punjab. The plot was in short laid with that judicious villainy, in which the Sikh surpasses all Asiatics, and the Maharani all Sikhs. All these confessions were subsequently confirmed by letters under the Maharani's own hand, and, of themselves, fully justified the energetic measures which the Resident adopted against her. The sepoys were instantly tried, shot, transported, or acquitted; the guards at the gates of Lahore were doubled; and the fakirs of the city, who were well known to be the most active agents against the British Government, were ordered to quit Lahore. The Rani was not only deeply implicated in this conspiracy, and suspected to be the instigator of the revolt in Múltan, but she had also become politically dangerous. All the disaffected in the Punjab looked up to her as their natural head; and her removal from the scene of her intrigues was considered absolutely necessary for the peace of the country. However small the legal offence which could be proved against her, every man in the Punjab was well aware, that her restless spirit never ceased from plotting, and that she needed only an opportunity, to slake her thirst of blood upon all who bore the British name, or were friendly to the British power. Fakir Núruddín, an old friend of her husband, with Lieut Lumsden of the Guide corps, and some guards, proceeded to Sheikhúpur, with an injunction to the Maharani, from Sir F. Currie and the durbar, to obey their orders. As it was expected that resistance might be attempted by the guards at Sheikhúpur, they were in part removed, and two companies of the 14th Light Dragoons were ordered to hold themselves in readiness for a march. The durbar suggested that a little deceit was advisable, and proposed that the Rani should be told that her destination was Lahore. This Sir F. Currie peremptorily forbade; and the Rani remained in perfect ignorance of her destination, until she arrived at

Ferozepore on the 18th. After her departure, it was found that she had taken away with her a large amount of treasure, belonging to the Maharajah and the state of Lahore; and Major Macgregor, Agent for the Governor General at Benares, to which place she was sent, received orders to sequester all such effects. Much pseudo-pity has been wasted upon this atrocious woman, whose crimes have only been equalled by her strange fortunes. Renowned, even in the harem of Ranjít Singh, for her licentiousness, and without any one claim on the British Government, except for the bare means of subsistence, her energy and activity have procured for her many sympathisers, and some defenders. No deceit was ever practised in the matter of her removal; and she never was closely confined, till her own intrigues rendered severe measures indispensably necessary.

In the latter part of May occurred one of those slight local revolts, which, however unimportant in their results, furnish much instruction as to the course most proper to be pursued in the management of the country. Bhaí Maharaj, a Sikh Gurú, or teacher, had been deeply connected with the Preyma conspiracy, and a price had in consequence been set upon his head. He remained, however, at large, as it was impossible to induce any Kaudar to risk the deadly hostility of his neighbours, by the arrest of so popular a character. He had been seen in Unritsir and various other places, but with a small retinue; and the populace invariably refused to lend the slightest aid towards his seizure. After the outbreak at Múltan, his proceedings became more open, and he had evidently a considerable command of money. It was subsequently discovered that this money came from Múltan; and that the Gurú was one of the numerous emissaries, whom Múltraj employed to stir up rebellion in the various districts of the Punjab. As his band began to increase, he moved slowly towards Denanuggur, at the foot of the hills, closely watched by the Resident, who dispatched Lieut. Hodson and a party of irregular horse to Múkerian, with the view of surprising and securing him. The Mussulman Zemindars, and the Sikh, Misr Salub Dhyal, whose estates were on the left bank of the Chenab, promised to arrest him, if he should come their way; and the Resident took measures, which necessitated the Gurú to adopt that line of retreat. He received intelligence, that the next march made by Bhaí Maharaj, who had meanwhile crossed the Raví, would be within 30 miles of Lahore; and the 7th Irregulars, the mounted portion of the Guide corps, and a part of the 14th Light Dragoons, were ordered to leave Lahore at midnight on the 7th of June, and to surprise him. Unfortunately a storm came on, the Raví rose, and

the troops were unable to cross till the following morning. In pursuance of additional instructions from the Resident, they then made a forced march of 35 miles to a place called Jhundhalla, about 30 miles from the Ghat of the Ravi. But intelligence of the arrival of a British force had meanwhile got wind. The Kardars, Adálutís, and all other officials were in the interest of the Gúru, and, when the English forces arrived at Jhundhalla, they found that the object of their pursuit had fled twenty miles further. The Bhaí was, however, thoroughly alarmed; his partisans, who at one time had reached the number of 6,000, quickly dwindled down to 1,200; and with these he moved, at a speed such as a Sikh army only can attain, to Jhung. Here he was met by Misr Sahib Dhyal, and the Mahomedan Zemindars, by whom he was attacked, and, after a hard contest, driven into the Chenab. Nearly 600 men were drowned in that river, now swollen by the melting of the snows, and among them the Bhaí Maharaj himself. At another period, and under different circumstances, the Gúru would have been the leader of a new revolution; and, even on this occasion, the devotion, with which his followers regarded him to the last, was extraordinary, and only to be accounted for on the supposition, that he united rare personal qualities with the asceticism, on which his religious character mainly depended. It is evident too, from the narrative of those proceedings, that it requires very little exertion to stir up the Mussulmans against the Sikhs. So well aware was Múltraj of the effect, which the junction of the Gúru would have upon his fortunes, that he endeavored to resuscitate him for the encouragement of his troops; and, during some days, thus produced a very considerable effect, and caused considerable alarm to Major Edwardes. The imposture, however, from some unknown cause, failed, and, though subsequently tried again by Shere Singh, the Sikhs could not be induced to believe that he was alive.

We now turn to Lieut. Edwardes again. Within four days after the successful engagement of Kinzyri, he wrote to the Resident, that the task assigned to the army under him would be accomplished in a few days, and Múltraj and the rebels confined to the fort of Múltan. He, therefore, urged with great importunity, that his troops should not be exposed to the dangers of three months' inactivity, and that the siege should be commenced at once. He said, "All we require are a few heavy guns, a mortar battery, as many sappers and miners as you can spare, and Major Napier to plan our operations. That brave and able officer is, I believe, at Lahore; and the guns and mortars are doubtless ere this at Ferozepore, and only require to be

put into boats, and floated down to Bhawalpur." When it is considered, that a large siege train, and fifteen thousand men, were subsequently employed for more than a month in reducing Múltan, the reader may be disposed to censure the ignorance, or over-confidence, of Lieut. Edwardes. It was natural that he should under-rate the courage and resources of an enemy, whom he had just defeated with his raw levies. But it must not be forgotten, that the resources of Múltraj were then in their infancy; that they were greatly augmented between this period, and the time when the siege was actually commenced, five months after; and that the whole country had not then risen in arms, and imparted the strongest confidence to Múltraj's counsels. To this letter the Resident replied on the 27th of June, in language which gave Lieut. Edwardes every reason to hope, that his representations had made a favorable impression. Sir F. Currie said, that it would be useless to send guns and mortars without artillerymen to work them, and a plentiful supply of ammunition; that the character of the investing force would be in a measure changed by the addition of British materials; and that, if any part of the British army was employed, the force must be so large as to render success certain and speedy. He said that the aspect of affairs was certainly changed by the success which Lieut. Edwardes had obtained; and that another circumstance, which had great weight in determining the impracticability of operations two months before, was the belief that, at this time—the end of June—the fort and city of Múltan would be so inundated by means of cuts from the Chenab, as to render siege operations impossible; but that this apprehension was now removed. He, therefore, requested Lieut. Edwardes, and Lieut. Lake of the Engineers, to report on the local features of the fort and the surrounding country, with reference to the feasibility of siege operations against the fort, within the next two months, and also in October. The next day the Resident wrote to the Commander-in-Chief, that it was highly desirable in a political, as well as in a military point of view, that the means of reducing the fort should be at once provided; that the excitement which was caused, and the injury which was occasioned to all classes of the community, by the continued existence of rebellion in Múltan (confined though it was, to the fort) were incalculable; and, that the altered position of affairs, and the information obtained in the mean time had induced Major Napier (whose opinion his Lordship had taken, when the impracticability of operations two months before was determined) to consider it quite feasible to undertake the siege immediately, with every prospect of early success. He stated that a small force only

would now be required, except in artillery, and that a brigade would be sufficient. On the 1st of July, the Commander-in-Chief replied to the Resident, that he saw nothing in the altered position of affairs, which would justify him in taking upon himself the siege of Múltan at the present moment : that, on the contrary, the success of Lieut. Edwardes rendered it less necessary to risk the lives of the European soldiers at this season. He stated further, that he considered the force proposed by Major Napier quite inadequate; and that he never would consent to an insufficient force, such as one brigade of any strength, being sent. But the most remarkable portion of His Excellency's letter is the remark, that it would appear from the Deputy Commissary General's letter, that the bullock train would have to come from Cawnpore : from which it appeared that, during the two months in which this rebellion had been gathering strength, no preparations whatever had been made for taking the field, even in winter. On the same date, Lord Gough wrote to the Governor General, that he did not feel justified in taking upon himself the responsibility of sending such a force, as that now proposed by the Resident : but that, if his Lordship in council should decide on an immediate movement, the smallest force, which he could recommend, was two brigades of infantry, one of cavalry, and a native troop of horse artillery, in addition to the siege train. The Governor General, after the receipt of Lord Gough's letter, replied to Sir Frederick Currie on the 11th of July, and informed him, that, having carefully considered the various despatches which had been addressed to him, and weighed all the reasons which had been adduced for the immediate despatch of a force to Múltan, he entirely concurred with the Commander-in-Chief, in adhering to the former determination, and in abstaining from moving British troops against Múltan, at this season of the year. The season of the year was thus, in the opinion both of the Commander-in-Chief and the Governor General, the great obstacle to the commencement of operations.

On the 27th of June, Lieut. Edwardes informed the Resident, that he had, in the previous twenty-four hours, received an unbroken series of ill tidings. Sirdar Shumshere Singh was in command of a division of the Khalsa troops, sent to co-operate with Lieut. Edwardes against Múlráj ; but they were so notoriously disaffected, that they had been ordered to stand fast at Chichawutní, about sixty miles from Múltan. Contrary to orders, they had advanced in the direction of the town ; and the resuscitated Bhái Maharaj Singh was said to have been sent to welcome them. The four guns of Jhunda Singh's detachment, which had been ordered from Lurah to Jhung,

were said to have arrived at Raj Ghat to join Múlraj ; and Lieut. Taylor gave a most unfavorable account of the troops in Bunnú, among whom conspiracies were at work. Lieut. Edwardes adds, " Reflecting, however, that the treachery attributed to the Chíchawutni force, if really meditated, was not yet accomplished ; that it might be arrested by our advance, but would certainly be hastened by our wavering ; and that a second blow struck now at the rebels, before they can be reinforced, would drive them into the fort, and put us in a position to cut off all fresh comers ; above all, remembering (as I do night and day) that the lives of all our officers in Bunnú, Peshawur, and Hazara, depend on the speedy reduction of the rebellion to the smallest possible compass, and the complete humiliation of Múlraj in the public eye, I finally resolved to make not a single halt, but trust to the justice of our cause, and the Providence which defends the right. This morning accordingly we marched from Secundrabad." At the same time, he remarked, that there was not a moment's reliance to be placed on any Sikh army whatever ; and that he heartily wished Raja Shere Singh, and Sirdar Shumshere Singh, and all the Singhs with them, two hundred miles off at that moment, and that he was left alone to cope with Múlraj. Sheikh Emamúddín, who commanded a body of Mussulmans in the pay of the durbár, who were considered to be less infected with treachery than the Khalsa troops, was ordered to join him. His division was united with the force of Lieut. Edwardes, on the 30th of June, and the whole body marched towards Múltan. The Sikh Gúrú, the pseudo Bhaí Maharaj Singh had consulted the stars with great forms and ceremonies, and had fixed the 1st of July as the auspicious day, when Múlraj would be invincible. Inspired with this assurance, the Dewan resolved to fight. The engagement began after midday ; the Bhawulpur force was on the right, under the command of Lieut. Lake ; the Súraj-Múki Muhomedan corps, with General Cortlandt's ten guns, in the centre, commanded by that General ; Lieut. Edwardes' Pathan levies on the left centre, flanked by his Pathan cavalry ; and on the extreme left the troops of Sheikh Emamúddín, whose fidelity was doubtful. The scene of the engagement was the village of Suddúsain. Múlraj's artillerymen stood their ground with great obstinacy. The solemn blessings and promises of Bhaí Maharaj had inspired them with a desperate courage. At length the enemy was driven from grove to grove ; and the Dewan, who commanded in person, and was said to have had a fall from his elephant, mounted his horse, and retreated precipitately from the field, carrying with him all the guns but two, which remained to

mask the movement, and were desperately served. The Súrāj-Múki regiment of infantry finally decided the day, by a brilliant charge on the guns, led by Mr. Quin, Lieut. Edwardes' writer, but an old soldier. The force of the enemy on this occasion was estimated at 11,000. Many of these were men, who had just deserted from Sheikh Esmáu'ddín's and Rajah Shere Singh's ranks; the majority were old soldiers, and two-thirds of them Sikh and Hindú fanatics, to whom it had become a war of faith to uphold the Khalsa, and their Khuttrí master. The victory of Suddúsam was complete. "Now," says Lieut. Edwardes to the Resident, "is the time to strike, and it is quite painful to me, to see that I have reached the end of my tether, and can do no more." But though the Dewan had thus been discomfited, and was obliged to resign all command of the plain, and confine himself to the city and fort, the treacherous troops of Shere Singh were now advancing to renew and increase embarrassments. He had been ordered to remain at Ohichawutní, but had advanced contrary to orders to Tulumba; and, though repeatedly requested to halt, he at length advanced to Gogran, within six coss of the city of Múltan.

The Resident, on hearing of the first victory at Kineyri, consulted the Commander-in-Chief, as we have stated, regarding the feasibility of sending a British force to Múltan, to complete the work, which Lieut. Edwardes had so happily begun; and he directed a force to be held in readiness to march, pending the receipt of letters from the Governor General, approving that step. How the proposal was viewed by His Lordship, and by Lord Gough, we have already shown. It has been a matter of surprise, not unmingled with censure, that, after having thus applied for instructions, the Resident should have sent forward the force without waiting for a reply. The Blue Book explains the enigma. Sir Frederick Currie had intermediately received information of the second victory, which had been gained at Suddúsain on the 1st of July, and resolved immediately to take on himself the responsibility of ordering the army to Múltan. On the 10th of July, he sent an elaborate despatch to the Governor General, fully explaining the grounds on which he had ventured to adopt this resolution. To this letter Mr. Elliott, the Foreign Secretary, replied from Calcutta on the 22d of July, stating that nothing had been advanced by Sir Frederick Currie, calculated to weaken the strength of those reasons, which induced the Governor General, notwithstanding the political urgency of the case, to approve of his having refrained from bringing British troops into the field, at this season of the year, or which could have induced his Lordship to alter the resolution, already conveyed to him, that

British troops should not move against Múltan, until the fit season for military operations should commence ; but that, since the Resident considered it necessary, in exercise of the powers conferred upon him, to assume the responsibility, and had publicly issued the orders for carrying his resolution into effect, the Governor General in Council would not withhold his confirmation of those orders. It was his Lordship's wish therefore, that he should immediately direct the advance he had ordered, and proceed with vigour to carry out, at all hazards, the policy which he had resolved upon. Sir Frederick, on the 10th of July, directed General Whish, commanding at Lahore, to take immediate orders for the despatch of a siege train with its establishment to Múltan,—stating that the fort itself was to a certain extent invested by the Bhawalpur forces, and by those of Lieut. Edwardes, amounting in the aggregate to 18,000 men, and that the fidelity of this force could be depended on. He also stated that there was a force under Raja Shere Singh, and the principal Sirdars of the country, associated with Lieut. Edwardes, which might be relied on, for doing *no mischief* in its present position. We shall see in the sequel, how soon even this negative virtue of our allies disappeared under the machinations of Múltraj. On the 13th of July, General Whish received his appointment from the Commander-in-Chief to command the Múltan force, accompanied by the usual complimentary assurances, that his Lordship had the most perfect confidence in his ability. He stated at the same time, that he would not consent to the employment, at such a distance as Múltan, of a British force of less strength than was detailed in his letter of the 1st instant ; thereby giving his sanction to the supposition, that such a force itself would be amply sufficient for the successful performance of that duty. The intelligence of a design to send British troops to Múltan produced the most salutary effect on the motley group of faithful and faithless troops encamped before that city. Lieut. Edwardes wrote thus to Sir Frederick Currie : “ In Shumshere Singh's graphic language, the news of a British force being positively about to take the field came upon Shere Singh's camp, like ‘ fire upon water.’ The expression is so good that, as you read, you will, I am sure, fancy that you hear mutiny hissing at being extinguished, and dying away into smoke, with sputtering curses at the ever victorious Feringhis. Had you hesitated to take the field now, I candidly own that I think my position would have been converted, in a month, to one of the greatest peril.” Before we proceed to notice the progress, and the proceedings, of General Whish's force, we would make one quotation from a letter of Sir F. Currie of the 31st July,

which tends to show that he was not exempt from those miscalculations and misapprehensions, which were made by almost all others during this campaign. In a leisurely view of the past, present and future, the Resident says, "I do not think that any distinct plan of operations had been determined, beyond what I mentioned in my letter of the 10th, when the outbreak in Múltan occurred; from that time, it has been blended with the whole affair, and lately I have been assured, that, if Múltaj could hold out till November or December, the whole scheme, as at first planned by the Maharani, would be executed, and a grand struggle take place, in which Sikhs, Hill Rajpúts, and Mahomedans were all to join. I put little faith in this; the combination could never be made." Yet, owing to the extreme dilatoriness of our proceedings, Múltaj was enabled to hold out till November and December, and the combination was made: and, instead of having six thousand troops to cope with at Múltan, we had six times that number to fight against at Chillianwallah.

It has, we know, been usual to ascribe all the difficulties experienced in this campaign to the movement made by Lieut. Edwardes across the Indus; which was also said to have been undertaken not only without orders, but contrary to the strictest injunctions of the Resident. The Blue Book enables us to estimate the value of these assertions. On the 5th of June, the Resident wrote to the Government of India, that, as soon as Múltaj was obliged to re-call his troops from the Indus to defend himself against the advance of the Bhawalpur troops, "*Lieut. Edwardes will cross the Indus again, and in a very different condition from that in which he crossed it a month ago:*" and, on the 6th of June, Lieut. Edwardes himself wrote thus to the Resident—"I am happy to have received your sanction to my detaching General Cortlandt across the Indus, or going myself, if necessary, for the support of the troops of Bhawal Khan." Lieut. Edwardes crossed that river on the 10th of June. As regards the effect of his movement on Múltan, the Blue Book enables us to perceive that the plan (which the Resident appears to have designed, and Lieut. Edwardes to have executed) of confining Múltaj to his own city, was the very best which could have been adopted under existing circumstances. Lieut. Edwardes was thus enabled to afford full occupation to the Dewan and his troops during three entire months, from the date of the assassination of our officers, to that, on which it was announced in Múltan, that a British force was proceeding against it. Múltaj was thus effectually prevented from marching into the districts lying to the North West, between him and Lahore, and raising

the country. If Lieut. Edwardes had been confined to the right bank of the Indus, there would have been nothing to prevent the progress of disaffection : and it is impossible to peruse the papers given in the Blue Book without perceiving that, but for the active and energetic movements of Lieut. Edwardes, the treacherous chiefs and troops of the durbar, who had been sent against Múlraj, would immediately have joined his standard ; that a large Khalsa force would have been organized in the month of May ; and that, encouraged by our inactivity and the report that we could not venture to move British troops "except at the fit season of the year," and gaining accessions at every step, they would have taken possession of the various Doabs, and appeared before Lahore in the month of June. We should then have been constrained to fight our Súdalapur, and Chillianwalla, and Gúzerat, in those months in which the Commander-in-Chief had declared it to be impossible for our troops to take the field. From this calamity Government was saved by the energetic and admirable movements of Lieut. Edwardes.

We now turn to the Hazara district. The controul of it had been committed to Sirdar Chutter Singh, the father of Rajah Shere Singh, who commanded the troops before Múlтан, and of Golab Singh, a chief at Lahore. Shere Singh was considered to be one of the leading chiefs in the Punjab, from his age, his wealth, his landed possessions, and his influence. He had more to lose than any other chief by an unsuccessful collision with the British authorities. His daughter had recently been affianced to the young Maharajah ; and the completion of this alliance would have made him the most powerful noble in the kingdom. Associated with him, as the Political Assistant on the part of the British Government, was Capt. Abbott—the gentleman who was deputed by Major Tod to proceed from Khiva to Petersburg in 1840, in reference to the Russian slaves, who were subsequently liberated. The narrative of his romantic and perilous journey over that unknown country is one of the most interesting works of the kind ever given to the public. He was equally conspicuous as a soldier, an author, and a politician. The Resident thus describes him : "He has many excellent qualifications as a public officer ; an indefatigable application to business ; a most scrupulous desire to show the strictest justice in all his investigations, decisions, and proceedings ; and a kind and eminently conciliatory manner to the natives, coupled with great firmness and intrepidity of character. In Hazara, of which he has made the settlement, he is beloved, in fact almost worshipped, by the people ; all persons that I have conversed with, who have come from those parts, are unanimous in their estimation of him

They say that he has gained such an influence over the inhabitants of the province, that he can do whatever he pleases with a race whom the Sikhs could never control, and whom the wily and shrewd Maharajah Golar Singh was glad to get from under his Government on almost any terms." Since the outbreak at Múltan, there had been but little intercourse between Capt. Abbott and Sirdar Chutter Singh ; and evil-designing men had taken advantage of this circumstance to sow suspicious of the fidelity of the latter in the mind of the former. Perhaps Capt. Abbott might have been too ready, as the Resident supposed, to believe the reports of these treasons. But when it was considered, as the Resident himself allowed, that we were living in the Punjab, in such an atmosphere of treachery, perfidy, falsehood, and deceit, that it was certainly not easy to determine what was, or what was not, worthy of credit ; and when the long perfidious career of the Sirdar was remembered, no one will be surprized, if Capt. Abbott should have regarded Shere Singh with mistrust ; and it must perhaps remain an enigma, whether it was his treachery that caused the suspicions, or the suspicions which caused his treachery. The Pukli brigade had for some time been in a very unsatisfactory state. On the 1st of August, Capt. Abbott was informed that they had broken up their bazar, sold their stores of grain, culled in their cattle, packed up their baggage, and were about to march to Lahore. These proceedings were known to the Sirdar ; but he did not choose to report them. Capt. Abbott immediately raised the country, and determined to prevent the brigade from issuing out of the hills. The armed peasantry, who sprung up at his bidding, struck terror into the mind of the Sirdar Chutter Singh, —so he affirmed—and he collected a force near Hurripur for his own protection. He ordered the troops from the city to join him, and directed Colonel Canora, an American, who had long been in the Sikh service, to bring out the guns, which he positively refused to do, without Capt. Abbott's express leave. Chutter Singh repeated his orders more peremptorily ; the Colonel still refused, and, standing by them himself with a lighted match, after having fully loaded them, threatened to shoot any one who attempted to touch them. But he was deserted by his own artillerymen ; the troops of Chutter Singh closed on him ; and he fell pierced with many wounds. Capt. Abbott on the other hand considered that Chutter Singh had assembled troops at Hurripur with the treasonable design of liberating the Pukli brigade, and opposing the British Government. Immediately on the death of Canora, the Sirdar ordered all the troops in the province to his assistance ; and Capt. Abbott organ-

ized the armed peasantry with the determination to oppose that force. The report of this insurrectionary movement had no sooner reached Peshawur, than Major Lawrence wisely despatched Capt. Nicholson, with a small body of men, to seize and to hold Attock, the key of the Indus. The progress of Sirdar Chutter Singh's defection was slow; but there cannot longer remain a doubt, that, from the time of the Múltan insurrection, he was engaged in the national conspiracy against us, and was only waiting a fit opportunity for declaring himself. Candor was murdered on the 6th of August; and, for three weeks after, we have in the Blue Book a very tedious and most uninteresting correspondence between the Resident and Capt. Abbott: the former being most reluctant to believe in the Sirdar's infidelity, while the latter as strenuously maintained it. The Resident then sent the Sirdar Jhunda Singh from Lahore, to bring Chutter Singh to reason. Jhunda Singh was said to have more influence over him than any other man: but the result was eventually, that Jhunda himself turned traitor, and joined the standard of Chutter Singh, who threw off the mask on the 28th of August, marched to Hussan Abdal against Capt. Nicholson, and obliged him to retire upon Attock. The Resident, in his letter to the Government of India on the 1st of September, acknowledged that Chutter Singh had at length, fairly and finally, taken his line, and would use every endeavour to make his rebellion as formidable as possible; but he still clung to the hope, that he might be persuaded to lay down his arms—at the very time that he was organizing the most vigorous opposition to our interest, raising the country, and inviting Golab Singh and Dost Mahomed to join him. The wily Sirdar wrote to Sir F. Currie and the durbar, excusing himself from obeying the order to come into Lahore, because his troops would not allow him, and urging that Tej Singh, or Dinanath, or some European officer, might be sent *to assure the troops and himself*. The Rajah Dinanath was actually deputed on this fool's errand. It failed, as might have been expected. Chutter Singh then gave out that he had devoted his head to his God, and would stand or fall in the cause he had espoused. All the villages, which were known to have rendered Capt. Nicholson assistance, were burnt and ravaged; and the insurgent troops proclaimed with shouts the return of the Gúrúji's rule. The officers in command, in Hazara and Peshawur, implored the Resident to send a brigade to their assistance, in order to prevent the spread of the revolt: but the Commander-in-Chief determined that it would be highly dangerous to send a small force; and that no force whatever should be

sent, till a large body could be collected at the proper season of the year, capable of overcoming all opposition.

Let us now return to Múltan. We have stated, that the Resident ordered General Whish, on the 10th of July, to march, with an army of the strength which the Commander-in-Chief had indicated as sufficient for the purpose, to the siege of Múltan. But, though the rebellion had now been raging for three months in the Punjab, and although the public, both in England and in India, had been assured that Lord Hardinge had placed the moveable brigades in such a state of equipment, that they could march on the shortest notice, such is the dilatoriness which marks almost every military movement in India, that the force under General Whish, consisting of only seven thousand men, did not reach Múltan, a distance of only two hundred and twenty miles, with unrivalled convenience for water carriage down the stream, until *thirty-nine* days after the orders had been issued. The progress of the troops towards Múltan was marked by no incident; and they encountered no opposition. Neither did they suffer from the heat, as the Commander-in-Chief and the Governor General had anticipated; there were fewer casualties than might have been expected, even if they had marched "at the fittest season of the year." The bugbear, which had terrified their Lordships, was found to exist only in their own imaginations; and the soundness of Sir Frederick Currie's judgment, so far as the weather was concerned, in sending a force for the reduction of Múltan at that particular time, was fully vindicated. There cannot be the shadow of a doubt, that, if the preparation for the campaign had commenced with vigour, when the emente at Múltan was first announced, and, if the Commander-in-Chief had left Simlah on the 15th of July, and marched in person at the head of fifteen thousand men towards Múltan, the war would have been brought to a close within six weeks, without that fearful sacrifice of life, which subsequently darkened our success.

On the 3d of September, General Whish addressed a brief proclamation to the inhabitants and garrison of Múltan, inviting them to an unconditional surrender, and declaring that he should otherwise, in obedience to the orders of the Supreme Government of India, commence hostilities on a scale that must ensure early destruction to the rebel traitor and his adherents. Lieut. Edwardes, to whom the translation of this document had been committed, observed that our treaty with Dhulip Singh was still in force: that it was against him Múltraj had rebelled, and that, if we were to exclude his name from a proclamation, recalling the garrison of a Punjab fortress to their allegiance,

and mention only the name of Her Britannic Majesty, it would seem, as if we had already determined to confiscate the state. But his advice was overruled; and the inhabitants and garrison were invited to an unconditional surrender, "in honour of Her Most Gracious Majesty, the Queen of Great Britain." This proclamation, which was issued on the 3d of September, produced no effect. On the 6th, a meeting of officers was held at the General's tent to arrange finally a plan of attack on the fort and city of Multan. Two plans were proposed; the first, that of taking the town of Multan by a *coup de main* at any cost, in one day; and the second, that of marching round to the north, and attacking the citadel by regular approaches. Both plans were rejected. Lieut. Lake then submitted a proposition to run a trench from the battery on the extreme right of the Daūd-pūtra camp, north east to a point called Ramtīrut, which would be upwards of a mile; and to throw up heavy gun batteries at such points of this entrenchment, as would drive away the enemy, without much loss of life, and with certain success. This plan was adopted. On the 12th of September, General Whish determined to take the enemy's position in front, and near the advanced picket of the trenches. The columns advanced to the attack about 9 A. M. The position was a strong one, and stoutly defended; the conflict terminating only in a series of hand to hand encounters. The enemy was at length driven from it, but our loss was very severe. We had five officers killed, and twelve wounded; 39 men killed, and 216 wounded. The victory remained with us;—but, within two days after, General Whish raised the siege, which was not renewed for more than three months.

This singular determination to suspend the siege, and to wait for the arrival of reinforcements, which could not be expected to reach Multan in less than two months, filled the community throughout India, as might well have been anticipated, with indignation; but it was forced on General Whish by the treachery of Rajah Shere Singh. So admirably was that chief able to play the hypocrite, that he deceived even the sagacity of Lieut. Edwardes, who wrote to the Resident on the 4th of September, that, if the intentions of the Rajah were to be judged of by his past conduct, nothing could be more satisfactory or loyal. Since his arrival, he had omitted neither persuasion, threats, nor punishments, to keep his troops to their duty. After detailing various instances of his fidelity, Lieut. Edwardes stated, that on the previous day he had moved out of his camp, and cannonaded Mūlraj's troops at the bridge, whom he threw into great confusion: but that he was obliged to retire,

by the heavy guns from the fort, and (as Lieut. Edwardes supposed) by the refusal of Sirdar Uttar Singh's and Sirdar Shumshere's divisions, to take part in these "heretical proceedings." The Rajah acknowledged that he never expected to effect any thing by this move; but he thought it would be a good thing to get a few men killed on both sides, so as to destroy the good understanding between his own Sikhs, and those in the garrison. "Sull," writes Lieut. Edwardes, "if Sirdar Chutter Singh should succeed in attracting the Peshawur troops to his standard, and raising any thing like a national movement against us, I should not expect Rajah Shere Singh to remain faithful, however well he may be inclined. It would be expecting too much from a son, and a Sikh." On the morning of the 8th of September, the Sheikh Emamuddin had an interview with Lieut. Edwardes, in which he stated that the Rajah Shere Singh, though hitherto firm in his allegiance, was now "altering his mind;" that messengers had come from Chutter Singh; that the Rajah, after reading the letters, which were in Gurmukhi, had carefully put them into water, and obliterated all traces of their contents; and that his Muthurs were beginning to open their mouths, and talk big, like other malcontents. On the morning of the 9th, Rajah Shere Singh waited on Lieut. Edwardes, to report a mutinous meeting of the troops of the Sirdar Uttar Singh, which had been held on the night of the 7th September, and exhausted himself in complaints against the divisions of that chief and Sirdar Shumshere Singh, although his own troops were daily deserting to Múlraj. In letter of the 10th September to the Resident, in which these and other particulars are given, Lieut. Edwardes says—"It becomes therefore necessary to consider it a probable contingency, that Múlraj's army will be swelled by two-thirds of Shere Singh's numbers; my feeling is that I should like to decide the matter myself, instead of leaving things to run their course, by surrounding and disarming the Sikh force, which I consider present circumstances would most fully justify; but unfortunately they are in such a position, that it is impossible to turn their flank, either right or left, and, if I were to move down on their rear, they would in self-defence be driven into Múltan." The General and Lieut. Edwardes having held a consultation on the subject, it was agreed that the only thing that could be done was to direct the Sirdars to march back to Lahore. Lieut. Edwardes then sent for the three Sirdars, and informed them of the General's wishes. They received the announcement with feelings of repugnance. They said their men would not march; but at the same time they confessed, that, if they remained before Múltan,

the whole force would go over gradually ; and that there was no dependence to be placed on them. Shere Singh warmly expostulated against his division being sent away, when they were ready to give their lives in the cause of the Maharajah. It was then settled, that Sirdar Uttar Singh's division should be ordered back to Túlumbah, under pretence of keeping open the road, and Sirdar Shumshere's division to Kurrumpur, for the same purpose ; and that Rajah Shere Singh's division should take up a position to protect the ferry. The morning of the 14th was fixed for carrying out these arrangements. On that same day, Lieut. Edwardes wrote to the Resident : " The question of the intentions of the Sikh force under Rajah Shere Singh has this morning been settled, by the camp moving bodily off to Múltan, and joining the rebels. The Rajah put himself at the head of the movement, and ordered the ' Dhurm ka dhosa,' or religious drum, to be beaten, in the name of the Khalsa." The other chiefs were carried away by the troops ; but Sirdar Uttar Singh subsequently made his escape from the army, and joined Lieut. Edwardes' Camp ; the nephew of Sirdar Shumshere Singh did the same ; he himself had endeavored to escape, but had been forced into Múltan. It appears that, four or five days before this event, the Chief Engineer had pronounced his opinion that the force before Múltan was not sufficient for its capture. The idea of raising the siege was combatted by General Whish ; but he found that the same opinion had been formed also by other influential officers. Whether the siege would have been continued, if there had been no defection of the Sikhs, it is now idle to enquire. That event rendered our retirement an act, not only of wisdom, but of necessity. On hearing of this treachery of Shere Singh, the General adjourned to the tent of the Chief Engineer, where several officers had assembled : and a unanimous opinion was expressed, that the siege was no longer practicable. Lieut. Edwardes justly considered that we were no longer engaged with a rebel Kardar alone, but with the whole Sikh army in another struggle for independence. It was therefore determined to concentrate the troops, and assume a defensive, but dignified, position ; till the British Government could organize its resources for the Punjab war, into which we were thus launched.

The number of troops, which Shere Singh took over to Múltan, on the 14th of September, amounted to about 5,000, with two mortars, and ten guns ; and 3,000 of the Khalsa troops at the same time proceeded towards Jhung, and Lahore, with three guns. Immediately after his defection, Rajah Shere Singh issued his manifesto, to make known " to all the inhabitants of

the Punjab, with what oppression, tyranny, and unbrotherly violence the Feringhís have treated the widow of the great Maharajah Runjit Singh, now in bliss, and what cruelty they have shown towards the people of the country": wherefore, "by the direction of the holy Gúru, Rajah Shere Singh, and others, with their valiant troops, have joined the trusty and faithful Dewan, Múltraj, on the part of Maharajah Dhulip Singh, with a view to eradicate and expel the tyrannous and crafty Feringhís. All who are servants of the Khalsají, of the holy Gúru, and of the Maharajah, are enjoined to gird up their loins, and to proceed to Múltan without delay. Let them murder all Feringhís, wherever they may find them, and cut off the dáks. In return for this service they will certainly be recompensed, by the favour of the holy Gúru, by increase of rank, and by distribution of rewards." It does not appear that the Dewan Múltraj either expected, or desired, to be joined by the Rajah and his troops. He was anxious that the Rajah should desert the British army, but not that he should take up his residence in the town. His troops, therefore, were not permitted to enter the city, till Múltraj was assured of their fidelity. They were encamped outside the Bohur gate, where Múltraj met them, attended by an overwhelming escort; and the *granth* was brought, in order to administer the oath of fidelity to the new comers. All swore fidelity, except (according to his own statement) the Sirdar Shumshere Singh. After this ceremony, the Dewan withdrew all his own troops from the entrenchments in front of the British army, and told Rajah Shere Singh to occupy them, to the great discontent of his troops. The accession of the Rajah raised the forces of the Dewan to about 15,000 men.

The failure for the time of this expedition was naturally calculated to injure the political reputation of the Resident; and, in one of the earliest letters written after the calamity was known, he addressed the Government of India in vindication of his proceedings. "The force sent from this was generally considered to be larger than was required. I am satisfied that its failure was never for a moment anticipated by any one, if the troops arrived at Múltan in an efficient state:" and no besieging army ever sat down before a fortress, in a more efficient condition, or in a state of higher equipment, than that of General Whish. Sir Frederick Currie likewise remarked that the Chief Engineer gave his professional opinion, that a smaller force would suffice. The Commander-in-Chief was himself satisfied of the sufficiency of the force. The responsibility of despatching an army against Múltan, at this season of the year, at all, rested with the Resident; the responsibility of sending a sufficient force belonged to the Commander-in-Chief. His Excellency's words

on this subject are very clear and decisive : " Unacquainted, as yet, with the political necessity for the immediate movement of this force, yet, as it is to comprise that detailed in my letter of the 1st instant to the address of your Lordship in Council, I do not feel justified in interfering ; as neither the character of the army, nor the safety of that portion of it which will be employed, can be compromised otherwise than by the loss of life, which the season of the year may occasion, and which, it appears, will be guarded against as much as possible." Sir Frederick Currie triumphantly refers to the admirable condition of the army : " The troops have, in no way, suffered on account of the season, but have, in fact, been more healthy and effective than the corps in any of the cantonments. When operations were suspended, the wounded and sick averaged only six per cent. of the force."

Immediately on receiving intelligence of Shere Singh's defection, Sir Frederick Currie determined to take possession of the fortress of Govindgur, which the Sikhs considered the key of the Punjab, and looked upon with reverence, as the work on which Runjít Singh bestowed so much attention and treasure, during the latter years of his life. A detachment of that valuable body, the corps of Guides, was sent to this important fortress, who, though under a native officer, took possession of it in thirty-six hours, and before troops could arrive to their aid. At the same time, the Commander-in-Chief at Simla ordered H. M. 20th Foot, and the 31st and 56th regiments of native infantry, to proceed with all practicable expedition to reinforce Major General Whish. This force however never went. On the 20th of September, His Excellency ordered the assembling of an army on the frontier ; solicited the permission of Government to organize it into divisions and brigades ; and pressed on the attention of the Governor-General the expediency of its being recruited up to the former establishment, of 1,000 privates per regiment of infantry, and 500 sowars per regiment of irregular cavalry.

The Governor-General was now completely aroused to the necessity of adopting the most vigorous measures. In writing to the Secret Committee, he says, " This deliberate exhibition of perfidy, and cowardly malice against British officers, and professedly on the part of Maharajah Dhuilíp Singh, has brought matters to a crisis, and compelled us, at last, to come to the conclusion, that no other course is open to us, than to prosecute a general Punjab war with vigour, and ultimately to occupy the country with our own troops." His Lordship therefore ordered the army to be increased by the addition of 17,000

men ; " and, as these will be drafted into existing regiments, without adding to the number of European officers, we have observed the most economical scale, by which so large an augmentation can be obtained." He also ordered the Government of Bombay to send a brigade through Scinde to co-operate with the Punjab army, and transferred to some of the Bengal stations three Madras regiments.

Shere Singh continued at Múltan twenty-five days, after he had openly revolted. His presence had always been irksome to Múltraj, who from the first day distrusted the motives of his defection. " He was also," as Lieut. Edwardes remarked in his letter to the Resident, " constantly afraid of the Sikh force exacting rewards from him ; a demand which his treasury in Múltan is now unable to meet ; and he at last hit upon the expedient of promising them pay, if they would go and have one good fight with the British, which the Sikhs declined." On the 9th of October, Shere Singh marched with all his force from Múltan, and offered battle to General Whish in the plain. He is said to have fired some eight pounders into the camp, and then made for Sirdarpur. Though he is supposed to have taken with him only 5000 men and twenty guns, yet his army was swelled at every step by the old veterans of Ranjít Singh, who crowded to his standard, exulting in the prospect of a second draught of the fierce cup of victory and rapine :—and he departed unpursued. Great was the indignation throughout India at the news ; and for the second time men mourned over the decay of the old spirit of Assaye and Laswari. Even the popularity of Lieut. Edwardes could scarcely stand the rumour, that his advice had produced this apparently pusillanimous resolution. We believe that his advice *did* produce it ; but on reasons somewhat different from those ordinarily given. The proposal was to despatch eight hundred cavalry, in pursuit of a regular army of 5,000 men, with twelve heavy pieces of cannon, and the finest artillerists in Asia to work them. It was this project, which Lieut. Edwardes resisted, and for a time successfully : but at last General Whish determined to pursue his own course, and despatched this limited force in pursuit—fortunately without success. In truth, the idea of an English army (except when led by a racing General like Sir Walter Gilbert) ever overtaking a Sikh force savours of the absurd. Throughout the war, at Ramnuggur, at Chillianwallah, at Russúl, at the passage of the Indus, the Sikh army waited for, escaped from, or moved round, the British, with the most perfect facility ; crossed rivers, which occupied British troops many days ; and, in every imaginable mode, demonstrated that the excellence of the British Commissariat

was no match for the simplicity of the Sikh, and that men, who can bivouac in the open air, and live on parched grain, will march much faster, than those who must have double tents, and carry their luxuries with them.

We now leave Shere Singh to pursue his course towards Lahore, and proceed to narrate the progress of events in Hazara, Peshawur, and Bunnú. The reader will remember that the Resident had sent Rajah Dinanath to bring the Sirdar Chutter Singh to reason. The Rajah wrote daily to Sir Frederick Currie, while on his progress towards Hazara; but it soon became evident to the Rajah, that Chutter Singh never intended to give him an amicable meeting, but was rather manœuvring to obtain possession of his person, in order either to induce him to join the Khalsa cause, or to retain him as a hostage. Under all circumstances he would have given out that the Rajah Dinanath was associated with him, to induce others to join in the rebellion. The Rajah was fully aware of the Sirdar's purposes, and avoided the line of road on which his adherents were posted. When the news of Rajah Shere Singh's defection reached Lahore, the Resident considered the time for negotiation at an end, and recalled Rajah Dinanath to the capital. Meanwhile the Sikh regiments in Bunnú, which had long been ripe for revolt, threw off their allegiance, murdered Colonel John Holmes, a most respectable officer, and a very old servant of the Sikh Government, and invested the fortress of Dhulspgur. The Governor, Futtch Khan Tawana, held it against them for some days, and was then obliged to evacuate it for want of water, when he, and six of his followers were barbarously cut to pieces. The Bunnú troops, consisting of four regiments of infantry, 500 cavalry, six troops of horse artillery, and four heavy guns, were then at liberty to join the standard of Rajah Shere Singh.

The troops at Peshawur had hitherto resisted all the allurements of Chutter Singh. On the 13th of October, Major Lawrence wrote to the Resident, that he was still able to hold his ground; and that, when he could do it no longer, he would take to the fort of Shahmurgur, which he had provisioned for 3,000 men for a month. He importuned the Resident to send only a single brigade up the Jhelum; in which case he felt assured that the province might be saved. But, for reasons detailed by the Governor General in his despatch to the Secret Committee, no troops were sent. The Sirdar Chutter Singh had been for a long time making overtures to the troops at Peshawur; but they had resolutely withstood all. Despairing of being able to enlist them on his side, the Sirdar was on the point of marching from the Indus towards the camp of his

son, when the revolt of these troops was brought about through Sultan Mahomed Khan. This man, the brother of Dost Mahomed, was under the greatest obligation to the family of Major Lawrence. He had been detained as a prisoner at Lahore by Runjít Singh, who never would permit him to quit the city. On the appointment of Sir H. Lawrence, as Resident, he received permission to retire on his own jaghíre at Peshawur : yet it was through the instrumentality of this traitor that the troops were induced to break out into open revolt. On the 21th of October, at 8 P. M., they marched down, and attacked the Residency. " Shot, shrapnell, and grape, were poured on the house in rapid succession, and answered by musketry from the Residency wall ; and many men were killed and wounded." On the opening of the fire, the Sikh Governor, of whose fidelity no doubt was ever entertained, came to Major Lawrence in a state of frantic alarm, declaring his only anxiety to be the safety of the British officers, and stating, that, as no dependence could now be placed on any of the troops, they ought to seek safety by flight. Major Lawrence, after having held his post for many weeks under the most desperate circumstances, seeing at length that it was no longer tenable, and that the attack must lead, during the darkness of the night, to a fearful slaughter, determined to quit his post. He and Lieut. Bowie, with Mr. Thompson, the sub-assistant surgeon, Mrs. Thompson, and fifty Afghán horse, got out of the south gate, not without difficulty ; and they had scarcely done so, when his own Pathans gutted the house. During the day, Sultan Mahomed Khan gave Major Lawrence the most sacred promises of protection at Kohat (engaging to escort him at any time in perfect safety to Bhawalpur, Múltan, or Scinde) ; and the party therefore pursued their melancholy journey during the night to that town, which they reached the next morning. On hearing of the catastrophe occasioned by that " thoroughly faithless miscreant," the Resident wrote thus to the Governor General :—" I am satisfied that the Governor General will consider that Major Lawrence and Lieut. Bowie maintained their position, as long as it was possible to do so ; and that the ultimate defection of the Peshawur troops, in spite of all Major Lawrence's skillful management, in no way detracts from the merit that is due to him, for the judicious and intrepid conduct, which has kept that force to their duty, so long after the rest of their brethren were all in open rebellion, and using every endeavour, by appealing to their patriotism and their religion, to induce them to join the rebel standard. Major Lawrence had a most difficult task to perform, and he performed it nobly." The defection of the

Peshawur troops completes the circle of Punjab treachery. Within twelve weeks all the Khalsa troops, with all their Sirdars, had broken out into open revolt, and were now in the field, seeking the entire expulsion of the Feringhís from the land of the five waters. Major Lawrence and his party found Mrs. Lawrence at Kohat. She had left Peshawur, in the midst of the troubles, with a strong escort of Afghán horse, under the protection of a son of Súltan Mahomed, but was induced, through the treachery of that young Barukzye, to turn off to Kohat, though there were no difficulties in the way. While there, a chivalrous project was undertaken by Lieut. Taylor of Bunnú to bring them away by a steamer sent to Esaknil: but, while engaged in this enterprise, Sultan Mahomed, the faithless traitor, sold them to Chutter Singh; and Chutter Singh sold the district of Peshawur to the Afghans. Major and Mrs. Lawrence, and the rest of the party, were then transferred to Peshawur, where they arrived on the 11th of November. They were strictly guarded, but otherwise well treated in every respect.

From intercepted correspondence, it appeared that Shere Singh left Múltan under instructions from his father, who appointed a meeting with him at Gúzerat, where there was to be a grand gathering of the Khalsa troops. Little did he dream, that *there* would be the last gathering of Runjít's soldiers, and that it was destined to be the grave of the independence of Lahore. Rajah Shere Singh left Múltan with 5,000 men; but, it appears, that there were constant desertions subsequently from the standard of Múlraj to that of the Rajah, to whom the Khalsa troops now looked for the re-establishment of their nationality. Múltan was comparatively deserted for the more dangerous, and ambitious, and tempting enterprizes, on which Shere Singh was about to enter. The Rajah left Múltan on the 9th, and marched with great rapidity towards the Raví, which he crossed on the 11th and 12th. He then moved toward Jhung on the Chenab, with the intention, as was supposed, of proceeding up the left bank of the river to Jellalpur, or Ramnuggur, where it was conjectured he would cross the river to Gúzerat. The Rajah himself gave out that he was marching on Lahore: "but this," said the Resident, "he will not do;" adding that, "if he has any enterprize, *which he has not*, he might occupy Sheikhpúr and threaten Lahore itself, knowing that without reinforcements we could not march out to oppose him." It seems strange, that one month after it was known that we were involved in a war with the whole of the Punjab, so little care had been taken to strengthen our positions, that we were

unable to march a force out of the capital to prevent the approach of 5,000 of the enemy! The Resident therefore gently hints to the Commander-in-Chief, on the 18th of October, that the advance of a brigade from Ferozepore to Lahore would make the Rajah cross the Chenab, and proceed up the Jetch Doab at once to his destination. But Rajah Shere Singh *did* shew enterprize. On the 22nd, the Resident directed the officer commanding at Lahore, to beg General Cureton to order up from Ferozepore the regiment of cavalry, and the troop of horse artillery, which were said to be ready to march at the shortest notice. This movement, he said, was made necessary by the fact, that Shere Singh had thrown forward all his cavalry to within sixty miles of Lahore, with orders to advance to Sheikhúpur, and to cover the march of his infantry up the left bank of the Chenab to Ramnuggur. On the same day, the Resident wrote to the Commander-in-Chief, that Shere Singh's was a bolder move than he had expected, and could only have been adopted under the knowledge of our having no disposable troops at Lahore. He stated that the Rajah was devastating the country as he went along. "If we could get at him, push him into the river, and take his guns from him, I should be glad of his coming up the left bank of the Chenab; but, as I fear that cannot be managed, I am in hopes, that the movement of the troops upon Lahore will have the effect of making him cross the river at or below Jellalpur." Two days after, Sir Frederick Currie wrote under still greater emergency. Shere Singh was advancing up the left bank of the Chenab with the avowed intention of attacking Lahore, and the Bunnú troops and those of Uttar Singh were marching to join him. He had shown great enterprize. He had pushed forward his advanced divisions to within twenty-five miles of the capital; and his officers were raising the country within twelve miles of it. But this was not the worst. So bold had he grown by our inaction, and the total inefficiency of our equipments, that he actually sent a party to insult us, by burning the bridge of boats constructed on the Raví, within a mile and a half of the city walls! Happily only two boats were destroyed. At the same time his officers attacked a small post of durbar troops, on the right bank of the Raví, within sight of Lahore, and carried off eighteen zumbúrgahs in triumph. While the Rajah was moving about the country with such rapidity, and, as Sir Frederick Currie said in his letter to the Commander-in-Chief, "the garrison of Lahore was menaced, and hemmed in by the rebels," our reinforcements from Ferozepore, which had been cut down, from the

necessity of circumstances, to two regiments of infantry, one of cavalry, and a portion of artillery, were moving up at the rate of *eight* miles a day. If, said the Resident, an attack were made on the cantonments at Anarkullī by the insurgents, and a simultaneous rising were to take place in the city, the population of which is all more or less hostile to us, we should without reinforcements be in a very critical, as well as, in the sight of India, a very discreditable position. Fortunately, this despatch did not fall into the hands of the Rajah; else he might have taken advantage of circumstances, and come down with his whole force on the cantonment, while his emissaries created a simultaneous rising in the city. But his object was to form a junction with the troops coming to his standard from Bunnū and the Hazarah country; and he accordingly crossed the Chenab on the 23d, after having committed the greatest excesses against the Mahomedans of Jhung, at the request of the Hindu residents. Brigadier Cureton at length reached Lahore, and crossed the Ravi, with a large and efficient force, consisting of two European regiments of cavalry, one of infantry, and one regiment of native infantry, and three of cavalry, well supported by artillery.

On the same day intelligence was received that the rebel force, under Lall Singh Moraria, had moved towards Gúzranwalla, where he expected to be joined by two other chiefs and their levies. Gúzranwalla is the largest town in the Rechna Doab; and the retention of it appeared so important, that Sir Frederick Currie wrote urgently to Brigadier Cureton, on the day he crossed the Ravi, to this effect: "If Gúzranwalla falls into the hands of the rebels, it will strengthen the cause of the insurgents amazingly; and, if they retain possession of it, we shall get neither supplies nor carriage from the Rechna Doab, upon which we now depend to enable the army to move forward: it will also very much damage our credit, if these parties, which are considered our most faithful allies, are left unsupported. If your force were to push on, the insurgents would probably fall back." The Brigadier appeared before the enemy on the 9th, and an attack was ordered for the following day; but in the interim new orders arrived from Head Quarters, with a positive and unqualified prohibition of any active measures whatever, until the Commander-in-Chief came up with the grand army,

The Blue Book gives us a much fuller record of the despatches of the Resident than we were prepared to expect: and it is calculated in an eminent degree to correct that unfavourable impression of his proceedings, which has been produced by the

general ignorance which prevails regarding tl. m. He was certainly incorrect in his calculation of Chutter Singh's intentions. He had too much confidence in the old man's love of ease and prosperity: and he was not aware, that his hatred of the British was a far stronger passion than his fondness for the jaghires, or the influence, or the wealth, which he enjoyed. Sir Frederick Currie also committed an error, as it afterwards appeared, in detaching Rajah Shere Singh, and the durbar troops, against Múltraj, as soon as he heard of the assassination; but he was not then aware of that universal feeling of hostility to our rule, which burned in the breast of almost every Sikh chief. He did not know, that the hatred of the Feringhis, which the Rajah exhibited in his manifesto, after his open revolt, existed in all its virulence, when he was sent against Múltraj in the end of April. But, with this exception, all the proceedings of Sir Frederick Currie, from the first hour of his hearing of the outbreak, until the 13th of November, when his authority was superseded by the arrival of the Commander-in-Chief at Lahore, were marked by promptitude, and decision of character. Immediately on hearing of the rebellion, he determined to despatch a large British force to the rescue of our officers at Múltan. It was only when he learnt that they had actually perished, and that their death was occasioned by the desertion of their escort, that he resolved to postpone the despatch of troops, and to refer the matter to the decision of Government. The reason he gives for this change of purpose is such as to commend itself to every mind. He expected that the other troops of the durbar, marching on Múltan, might act a similar part, and that the British reserve, sent to support and succour, would find itself opposed to hollow friends and actual foes: and, therefore, he would not consent to send a small British force. But at the same time he wrote to the Commander-in-Chief, stating the political urgency of the case, and consulting him as to the possibility of undertaking military operations, on the scale required, at this season of the year. His Excellency and the Governor General decided against the movement; but had a sufficient force been sent at the time, there can be no doubt, that it would not have suffered from the climate, and might have been eminently successful. The step, which he subsequently took on his own responsibility, of sending a force to Múltan, on hearing of Lieut. Edwardes' second victory, was in the highest degree judicious. The only objection to the movement on the part of the Commander-in-Chief was the season of the year; and yet the troops had not six per cent in hospital throughout the march, or in the camp at Múltan

There seems therefore reason to believe, that, if Sir Frederick Currie had been at liberty to carry out his own views, and if he had been vigorously seconded by the Commander-in-Chief and the Government of India, he would have brought the campaign to a close, in less than three months from its commencement.

The army, which had been collected at Ferozepore, at length began to move, with all its innumerable impediments. This force, with which the Commander-in-Chief now took the field in person (including the troops under Brigadier Cureton, which were in advance) has been generally computed at 25,000 men. His Excellency marched into Lahore with the head quarters of the army of the Punjab on the 13th of November, and crossed the Ravi on the morning of the 16th.

The active operations of the campaign, under the personal command of Lord Gough, may be said to have commenced on the 22d of November, just seven months and three days from the date of the murder of Agnew and Anderson at Múltan. Early on the morning of that day, an infantry brigade, accompanied by the cavalry division, in which were H. M. 14th dragoons, commanded by Col. William Havelock, and three troops of horse artillery under Brigadier Cureton, marched up to Ramnuggur, from which the camp was about three miles distant; and, not till then was it discovered, that the enemy had retired across the Chenab. A fire, apparently harmless, was immediately opened upon them from the British side of the river; and the artillery were pushed forward to enable them to play with greater effect. The heavy guns of the Sikhs, however, quickly silenced the fire of the six and eight pounders; and the artillery were compelled to retire, leaving one gun and some tumbrils imbedded in the sand. The course of this engagement and its disastrous result are described in the language of a soldier, in Dr. Buist's annals: and a more graphic description of a brilliant but unfortunate charge can scarcely be found in the pages of Napier:—

"A troop of our horse artillery had, by opening against the right bank, showed the position of the enemy's guns; and steady charge of the 3rd Light Dragoons, aided by Light Cavalry, had chastised on one point the presumption of the Singhs. Cureton had given his consent to another body of these being attacked by the 11th; and the Commander-in-Chief, riding up to William Havelock, had said—"If you see a favourable opportunity of charging, charge!" "The gallant old Colonel," remarks one, who was present, "soon made the opportunity." And so it was; for, not many minutes after, William Havelock, "happy as a lover," and sitting as firmly in his saddle, as when he overleapt the abbatis on the Bidassoa, placed himself in front of his cherished dragoons, and, remarking, "We shall now soon see, whether we can clear our front of those fellows, or not," boldly led them to war to the onset. All, who beheld it, have spoken with admiration

of the steadiness and the gallantry of this glorious g<sup>o</sup> p. The Singhs made a show of standing the charge "*a pied ferme*," and some of them must have stood well, for sabre cuts were exchanged with effect. Captain Gall, whilst grasping a standard, had his right hand cut through by the stroke of a Singh, which he delivered with the missing sound of an English paviour driving home a stone. Young Fitzgerald's skull was cleft to the brain by another blow from one of the enemy; but the mass of the Sikhs opened out right and left, and gave way before the victors.

"Thus the first charge seems to have ended, in which Havelock was not even wounded. We pretend not certainly to know by whose order a second was hazarded; but it seems certain that it was executed, and, even regarding the first, there had been misapprehension; for, as Clouston watched its progress, he exclaimed—"That is not the body of horse I meant to have been attacked;" and, riding to the front, received in his gallant breast a fatal matchlock ball.

"We hasten to the end, narrating as it has to us been narrated. Again the trumpets of the 11th sounded, and, overturning at first all that opposed them, onwards in the direction of the island they took their course. The Sikh battery opened on them a heavy fire, and there was a descent of some four feet into the flat; but Havelock, disregarding all opposition and all difficulties, and, riding well ahead of his men, exclaimed, as he leapt down the declivity—"Follow me, my brave lads, and never heed their cannon shot." These were the last words he was ever heard to utter. The dragons got amongst the ken ground, filled with Sikh marksmen, who kept up a withering fire on the tall horsemen, throwing themselves flat on their faces whenever they approached them. After many bold efforts, the 11th were withdrawn from the ground. But their commander never returned from that scene of slaughter.

"It is not yet known exactly how he fell. Probably his charger was struck down by a cannon shot, and then he would have to contend against fearful odds: in fact, his orderly has related that he saw him lying in the mill-lake, with several dead Singhs around him, and that, being wounded himself, he could not go to his Colonel's aid. Another dragon beheld him contending against several of the enemy. Havelock died, and his body remained in the sandy level in the power of the Singhs. He is said to have slain several of them with his own hand on this day. We need not be supposed to borrow from the romantic tales of Roland, and of Amadis, if we credit this assertion: for even the stag at bay will fiercely turn upon his hunter; what then the lion in the tiger's den?—We know that few had learnt in youth to wield sabre or rapier like William Havelock; and, at fifty-six, his eye had lost nothing of its native quickness."

For a week after this event, the Commander-in-Chief awaited, about six miles from Rummuggur, the arrival of his heavy artillery, which came up from the Raví very slowly, but as rapidly as our guns can be moved. It arrived under Brigadier Penny on the 28th. On the 2nd a plan appears to have been matured, distinguished by the military accuracy, and even genius, which mark all the cabinet campaigns of Lord Gough. It was designed that Major General Sir J. Thackwell, an officer celebrated in the Peninsular war, should cross the Chenab, at a certain ford recommended by the Engineers, and should proceed to attack the enemy's flank, while the Commander-

in-Chief himself stormed the batteries in front. The plan was excellent ; but it was marred in the execution. Sir Joseph Thackwell set out at the head of a body of troops, on the morning of the 2nd of December : on reaching the ford, he found that it was impracticable for guns ; and it was so reported by the officer, whom the Quarter Master General had despatched to examine its condition. The second in command, considering that the attempt would prove abortive, advised a return ; but Sir Joseph was far too enterprising an officer to make a retrograde movement ; and he marched to Wuzirabad, twelve miles higher up the river. The army crossed the Chenab in boats during the evening and night, and for nine hours bivouacked in the cold and wet upon its banks. At dawn, on the 3rd, the word was given to advance ; and the whole force moved forward, in earnest expectation of an engagement with the Sikh army, as the attack was expected to begin at 11 A. M. : but just then, an order arrived from the Commander-in-Chief, positively prohibiting any attack, until Brigadier Godby could arrive with a reinforcement. On the receipt of this communication, Sir Joseph was compelled to detach a portion of his already insufficient force to cover the crossing of that body. About two o'clock, the Sikhs began to fire upon our troops ; and the skirmish and cannonading did not cease till five o'clock in the evening. Shere Singh appears to have come down with a very large portion of his troops, and the conflict was for a time severe ; but he was unable to make any impression on our ranks. Had our troops been at liberty to charge, it is possible that the victory might have been complete : but the General was still fettered by the orders from Head Quarters, and, when at length he received instructions to act according to his own discretion, there remained but one short hour of daylight. It would have been necessary for Sir Joseph Thackwell, with 7,000 troops, jaded by a long march and three hours fighting, and within an hour of night, to storm three intrenched villages, defended by 30,000 men, and 40 pieces of cannon. Sir Joseph well knew his troops. He knew it was possible for them to conquer the enemy with threefold odds : but he also remembered Ferozeshuhur, and the fearful night after the battle—the night of horrors ; and he halted till the morning light should give him time to complete his victory. Wherever the real circumstances under which he acted are known, he will be considered, not only absolved from all blame, but as deserving of all honour. The ford, which he was expected to cross, was pronounced impracticable by the very officer of the Quarter Master's department, who was sent by the Commander-

in-Chief with Sir Joseph's force ; and, just at the time when the troops were prepared to charge the enemy, the General was ordered to wait for Brigadier Godby's brigade : while the discretionary order to attack the Sikhs did not arrive, till the shades of evening were closing on the army. In the morning it was found, that the Sikhs had departed with characteristic celerity, with all their guns, ammunition and baggage : and thus the plans of the Commander-in-Chief were completely baffled, and six weeks more of precious time were lost.

We now return to the operations before Múltan. From the day, when the siege of Múltan was raised, until the junction of the Bombay forces, which was delayed by a variety of causes, the army under General Whish was able to effect little beyond petty skirmishes. The sowars of Múlráj swept the country from end to end, and, as was afterwards demonstrated, accumulated so great an amount of provisions, as to enable him to maintain the horde within the walls, without indenting deeply upon his original resources. On the 22nd of September, a singular proclamation, published by Rajah Shere Singh, the Dewan, and his allies, fell into the hands of Major Edwardes. This paper calls upon all the Sikhs of the Punjab to join the revolted forces, and appeals with remarkable judgment to those feelings and passions, which were predominant among the Khalsa. In order to counteract its effect, Major Edwardes at once took upon himself the great responsibility of solemnly assuring the Irregulars under his own command, and those under General Cortlandt, that, in the event of the annexation of the Punjab, every man, who remained faithful to his salt, should be received into the British service. To this decided measure, and to this alone, must be attributed the subsequent fidelity of so large a portion of that force ; for, as it afterwards appeared, the leaven of treason had already entered into their ranks. The act was cordially approved by the Resident and afterwards confirmed by the Governor General. On the 6th of November, General Whish determined to remove a battery, which Múlráj had erected outside the wall of the town, and which greatly annoyed his position. The battery was on the side of the canal, about half a mile from the camp ; and the 32nd attempted to storm it, but without success. On the 7th, two brigades, of 1,300 men each, were ordered, under the command of Brigadier Markham, to move upon the battery, and, if possible, take the enemy by surprise. Early in the morning, however, a report began to prevail, that the whole of the Irregulars had gone over to the enemy ; and the idea of surprising the position was given up. It was subsequently known, that only

three hundred of General Cortlandt's men, who had not been in the battles of Kineyrí and Suddúsain, had gone over to the enemy,—and evidently with a premeditated design, as the regiment had taken with them all the property in their possession, which they would not have done had they intended to return. The plan of attack was therefore slightly modified. Instructions were issued to Brigadier Markham, and the other officers, to maintain a defensive attitude on the eastern (or camp) side of the canal, and not to attack the enemy's position, unless the Irregulars could be relied on for the occasion. It appeared, however, that the remainder of the Irregulars were faithful to the British; and the original attack was persevered in. In the morning the Sikh sowars, emboldened by the apparent passiveness of their assailants, but dreading to attack the regular troops, poured down on the position held by the Irregulars, on the farther bank of the canal. Lieut. Edwardes called his men to prove themselves more faithful than their brethren had been; and, headed by Mr. Quin, Lieut. Edwardes's head writer, they sprang forward, and, after a sharp hand to hand fight of half an hour, drove the enemy from that portion of the canal, and succeeded in maintaining their position. Meanwhile, the regular troops had crossed the canal in safety; and Brigadier Markham by a rapid movement placed the force under his command in a position to attack the rear of the enemy. Major Wheeler, in command of the cavalry, executed a brilliant charge, which drove the enemy up the bank of the nullah, and prevented the removal of the guns which had been posted there. The horse artillery opened their fire; the line advanced; and the rout of the enemy was complete. The batteries were then destroyed, and the force returned to camp, leaving nearly 1,200 of the enemy dead upon the field, an evidence of the furious valour with which the British troops had fought and conquered. This was the last skirmish of any importance, before the arrival of the Bombay reinforcements.

The Bombay force started from Roj on the 18th of December, and, after an uninterrupted march, arrived before Múltan on the 26th, and took up the position formerly occupied by the irregulars under Edwardes, Lake, and Cortlandt. The new reinforcements, which were all ready for action on the 29th, amounted to 9,000 men, and swelled Whish's force to the number of 17,000, with a train of 64 heavy guns. Three months had now elapsed from the raising of the siege; a delay, which, despite all the interpellations, explanations, and recriminations, concerning it, still remains unaccounted

for, and probably will remain so, until some fortunate historian shall discover, in some forgotten nook of the Chamber of Archives, the memoirs of the Indian Pepys. Nevertheless, when the siege did recommence, and the tardy march of the Bombay forces had placed at General Whish's disposal what he considered sufficient means to obviate all risk of a second repulse, he acted with the decision and energy of a British General. The troops, at the recommencement of the siege, occupied nearly the ground, which had been before taken up on the eastern side of the town. The Bengal regiments were upon the right; the Bombay column on the left; and Lieut. Edwards' irregular bands a little in the rear, near the scene of the battle of Suraj Kúnd. It was resolved on the 27th, that the suburbs of the city should be cleared, and a position obtained, upon which the breaching batteries might be advantageously placed. Four columns, under Colonel Capon, Col. Nash, Brigadier Dundas, and Colonel Young, moved to the attack upon four points at once: and, although the enemy fought (as Asiatics always fight behind stone walls) with desperate valour, yet the bayonet ultimately proved irresistible, and, at all the four points, the attack was signally successful. Seventeen officers fell: many others were severely wounded; and nearly 300 privates were either killed or wounded: but the loss of the enemy was much more considerable, amounting to about 1,400 men. This brilliant commencement of active operations raised the spirits of the troops, which had been somewhat unduly depressed, and reflected a glory upon the besiegers, which proved highly advantageous to their future attempts. By this dashing affair, moreover, the entire suburbs were placed in the possession of the British, and their batteries advanced to within 400 yards of the town; from whence they began to open with fearful effect. The heaviest battery was posted on the Mundi Ava, a mound to the extreme right of the British intrenchments; and, for the space of five days, the firing continued incessant from cannon, howitzers, and mortars. Night and day the fiery rain never ceased. The buildings within the town crumbled into dust. The populace died in hundreds, or were cut down by the cavalry, in their endeavours to escape. Explosion after explosion shook the ground, and demonstrated the skill and resolute earnestness, with which the Engineers had addressed themselves to their work. At length the great mosque, filled with thousands of maunds of gunpowder, was blown up, and the work of destruction appeared nearly complete. The breaches began to appear practicable on the 1st; but it was not considered

advisable to attack them till the 2nd, when the troops, selected for the enterprise, advanced in two divisions. The Bengal column, consisting of H. M. 32nd, and the 72nd and 49th N. I., attacked the Delhi, or northern, gate; and the Bombay column, comprising the 1st Fusiliers, the 4th Rifles, and the 3rd and 19th B. N. I. stormed the breach on the opposite side. Major Edwardes, with the irregulars, in the meanwhile opened a sharp fire on the west and south, and succeeded in distracting the attention of the enemy. The Bombay troops effected an entrance after a severe struggle, and were shortly afterwards reinforced by the Bengal column, who had found the Delhi gate impracticable, through the terrible fire of matchlocks from within, and the unfinished state of the breach. A sergeant, named Bennet, was the first to plant the colours on the wall: and ought afterwards to have received a commission for the daring act. The troops bivouacked all night in the quarter they had won; and, in the morning, another attack was made under Colonel Young upon the Doulut Gate, the only one remaining in the possession of the enemy. It was completely successful; by three o'clock, the whole of the town was in the hands of the British forces; and the first grand step towards the reduction of the fort had been happily achieved.

Although the town was now in our hands, and the annoyance of constant skirmishing had ceased, yet the capture of the fort was nearly as distant as ever. During the next five days, the howitzers played upon the fort with tremendous effect. The shells buried themselves in the walls, and, exploding, threw off great masses of masonry and brickwork. On the 5th of January, an envoy was sent from Múlraj to Major Edwardes, with a request for negotiation. To this that officer replied, that the time was passed; and that nothing short of unconditional surrender could be listened to. On the 8th, another effort to open negotiations was made by the Dewan, and at once refused by General Whish and Major Edwardes. The breaches were reported practicable on the 20th, and an attack ordered for the 22nd: but, on the 21st, a messenger, with full credentials from Múlraj, made his appearance in camp, and offered an unconditional surrender. It was accepted; hostilities were suspended; and, on the afternoon of that day, Múlraj, with 3,500 men, marched out of the fort, and surrendered himself to General Whish. Thus terminated a siege, the most memorable in our Indian History.

Before we proceed to narrate the battle of Chillianwallah, and the victory of Guzerat, we must refer to two slight encounters; slight, as compared with the great events of the

campaign, but which excited at the time an interest totally disproportioned to their importance, from the great talent and gallantry displayed in their suppression, and from the circumstance of their occurring within the British territory. In the beginning of November, Mr. Lawrence, Commissioner of the Trans-Sutlej states, became aware of disturbances in the districts around Núrpur and Pathan Kote. Ram Singh, the son of one of the titular Wuzírs of Núrpur, had embraced the opportunity, afforded by the general disquiet, to raise a small force of 300 freebooters, and to set up the standard of resistance to the British power. He does not appear to have had either project or design, but only a vague hope of embarrassing our officers, and collecting an army. He took up a position on a high hill, commanding the Doab, and covered with a dense jungle. Mr. Lawrence, after collecting a small force, marched towards Núrpur; while Major Fisher, with about 300 men, on his way to attack Ram Singh, besieged and occupied a little fort called Shahpur, and, after blowing up the bastions, proceeded onwards to join the other divisions of the force, which Mr. Lawrence had collected. Ram Singh was finally attacked, on the 20th of September, in his fastness on the hill. The arrangements were perfect. The hill was ascended on all sides at once, and, after a brief resistance, the enemy fled, leaving eighteen of their number dead on the summit. Owing, however, to the density of the jungle, Ram Singh himself escaped; and, though frequent attempts were made to arrest him, he contrived to reach the camp of Shere Singh.

About the 7th of October, the Resident at Lahore considered that the presence of a small force, in the districts on the farther side of the Beas, would be advantageous; and he requested that Brigadier Wheeler might be despatched, with a sufficient force, to reduce two small fortresses in that country, named Rungurnuggur situated about 15 miles from the Beas, opposite Sri Hurgovind, and Morarí, about 26 miles to the north of the other. Brigadier Wheeler accordingly marched against Rungurnuggur, and, after 12 hours' battering, the garrison evacuated the place at midnight on the 15th October. The Brigadier, throwing a small garrison into the fort, pursued his march against Morarí, which he reached on the 24th of October. An effort was made to prevent the evacuation of the place by the garrison, but it was fruitless; and, on October 26th, the fort, which is described as a paltry place, was entered without resistance. In all these movements the celerity and judgment of the officers in command were remarkable; and the regulars appear to have equalled even the lighter armed soldiers, in the rapidity of their movements.

We left Rajah Shere Singh marching at his own leisure, from the banks of the Chenab to those of the Jhelum, after the battle of Sudalapur. In that engagement, the advantage remained entirely with the enemy. Rajah Shere Singh was enabled, under cover of the night, to carry out the plan which he had previously matured; and he transferred his army from the right bank of the Chenab to the left bank of the Jhelum. When it was discovered, on the morning after the battle, that the Sikhs had taken their departure, parties were sent out in pursuit of them: but they had already advanced beyond our reach. The Commander-in-Chief's despatch to the Governor-General, on this occasion, was perhaps the most unfortunate his Excellency has ever written. "It has pleased Almighty God to vouchsafe to the British arms the most successful issue to the extensive combinations rendered necessary for the purpose of effecting the passage of the Chenab, and the defeat and dispersion of the Sikh force, under the insurgent Rajah, Shere Singh, and the numerous Sikh Sirdars, who had the temerity to set at defiance the British power. This force, from all my information, amounted to from 30 to 40,000 men, with twenty-eight guns; and was strongly intrenched on the right bank of the Chenab, at the principal ford, about two miles from the town of Ramnuggur." How completely the Sikh army was defeated and dispersed, was ascertained forty days after at Chillianwallah. Rajah Shere Singh, having thus retired in good order, and without any loss, to a stronger position on the Jhelum, remained for forty days unmolested by our army.

This delay in following up a victory, which was said to have ended in the total defeat and dispersion of the enemy, is a complete enigma. The Blue Book explains it but partially. In his despatch to the Secret Committee, dated on the 22d of December, the Governor General says, "Being satisfied, from accounts which had reached me, that, in any extended advance which his Excellency might attempt to make, he would experience very great difficulty in procuring supplies for the army, I requested his Excellency on no consideration to advance into the Doab, beyond the Chenab, except for the purpose of attacking Shere Singh in the position he held, without further communication with me. This injunction is based upon certain circumstances, and is to continue in force only, while those circumstances remain unchanged. The information, which I have since received, has led me to believe, that, in many material respects, they have undergone a change. I have, therefore, acquainted his Excellency, that, if he can satisfy his own judgment regarding the state of his own supplies, and supports, and communications; if the intelligence

he may receive, and the reconnoissances he may be able to make, shall satisfy him that the enemy may be attacked with success, with such force as he may have safely disposable, and without a heavy loss—in such case, I should be happy indeed to see a blow struck that would destroy the enemy, add honour to the British arms, and avert the prospect of a protracted and costly war.” This fearfully long sentence is very unlike Lord Dalhousie’s clear, brief, and vigorous composition ; and the complication of words is but an index of the complication of ideas, under the influence of which it was penned. The real meaning of these passages is, that Lord Dalhousie, somewhat injudiciously, interfered with the military movements of Lord Gough, on whom the entire responsibility of the campaign rested, and laid on him an injunction not to advance beyond the banks of the Chenab. It is true that Lord Hardinge had controlled the military movements of Lord Gough to an extent, which, when fully revealed, will create no small feeling of surprise ; but Lord Hardinge was a soldier, and Lord Dalhousie a civilian. This, however, was the only interference with the proceedings of his Excellency, chargeable on the Governor General during the war. Perceiving the error, which he had inadvertently committed, the interdiction was taken off, on, or before, the 22d of December. The delay, which took place in the advance of the British troops, from the time, when the guns were across the Chenab, until the 22d of December, is therefore to be attributed to the Governor General’s injunctions. The subsequent delay of twenty-two days belongs to the responsibility of the Commander-in-Chief.

While the army under Lord Gough was encamped in the vicinity of Rajah Shere Singh, Lieut. Taylor was employed in the siege of Lukki, a fort of considerable importance, at this juncture, beyond the Indus. That officer had proceeded on a chivalrous expedition for the rescue of Mrs. Lawrence from Kohat, and had reached Esakail on the Indus, when he heard that she had been treacherously surrendered by Sultán Mahomed Khan to the Sirdar Chutter Singh. Seeing no further object in remaining at Esakail, he had intended to proceed, by way of Lukki, to Dera Ismael Khan, and from thence to Multan, in time to meet the Bombay column. But, as the people of the country had come in to him, and professed their perfect allegiance, he thought that he could do Government more service, by marching into the district, and assuming the civil management of it. The garrison of Lukki, however, appeared determined to hold out, and he resolved to besiege it : and, collecting a small body of soldiers, he sat down before it, on the 11th of December. On the 14th, two batteries had been constructed,

but his fire was very weak and ineffective ; his guns were old, honey-combed, and untrue, and the carriages were falling to pieces ; he had none but hammered shot, carelessly made, and not nearly large enough for the bores of the guns ; still he persevered in the siege for a whole month, and the garrison at length surrendered. Had they held out twenty-four hours longer, Lieut. Taylor would have been obliged to raise the siege, and probably to retire across the Indus ; as Mahomed Azim Khan, the son of Dost Mahomed, arrived the next morning in Bunnú, with a force of between three and four thousand Affghans ; and the same night his messenger reached Lukki, with tidings that the relieving force was at hand. But they were too late. Had Lieut. Taylor retreated across the Indus, the Dúranis would have taken possession of Bunnú, Murwit, and Esakail, and would have been enabled to co-operate with the Sikhs on the Jhelum. Lieut. (now Major) Edwardes, seeing the importance of supporting Lieut. Taylor, sent him large reinforcements ; which enabled him to hold the district with perfect ease, till the Dúranis precipitately retreated from it, as soon as they heard of the battle of Gúzerat.

While Lieut. Taylor however was thus successful in Bunnú, the gallant Lieut. Herbert was obliged to abandon Attock. Though the place was so weak, that it could not have withstood a vigorous cannonade of a few hours, yet that gallant officer had now held out for six weeks, under such disadvantages, as few have ever been exposed to. He had hitherto relied on his Mahomedan troops, when combating against the Hindú Sikhs ; but Dost Mahomed himself had now reached the banks of the Indus, and summoned all the Mússulmans in it to his standard. Lieut. Herbert held a durbar of his officers, on the 1st of January, to ascertain the state of their feelings ; when all disguise was removed, and he found that there was no longer hope, that either they, or their men, would oppose the Amír. Two rafts were secretly prepared, and at midnight he left the fort, and embarked on the Indus. Of his subsequent adventures we have no account : but he fell into the hands of the enemy, and joined Major Lawrence in his captivity.

The fall of Attock, and the advance of Chutter Singh to his son on the banks of the Jhelum, at length induced the Commander-in-Chief to determine to attack the Sikh position, before the arrival of reinforcements. Sir Henry Lawrence had returned from England to the Punjab, and was at this time in the British camp ; and the revived activity of our armies was generally ascribed to his importunity.

The Sikhs lay in a long intrenched camp, which stretched from Murg and Chillianwallah to Russúl, a distance of nearly

a mile and a quarter ; but with their main strength concentrated towards Múng. At Russúl, however, the intrenchments were the strongest; and the rear rested upon a broad pass, which afforded a ready means of escape in case of defeat. The Jhelum rolled half a mile to the right of their intrenchment at Múng, and was spanned by a bridge of boats; so that their whole line lay at a small angle from the river, while the pass, and the bridge at either extremity, afforded the means for a rapid and unpursued retreat. The Commander-in-Chief determined, with his usual judgment, to dislodge the enemy from Russúl, and thereby to turn their flank, and compel them, either to retreat across the Jhelum in disorder, or to fight him on ground of his own choosing, and with their forces completely inclosed by his army and the river. The plan was admirably laid; and, on the morning of the 13th of January, the troops were ordered to move to their new encamping ground. By the time they arrived in front of Múng, they were weary, and exhausted with a long march, and six hours' fatigue under arms. They were almost beyond the range of the enemy's guns; but, at one o'clock, an unlucky shot fell near the Commander-in-Chief: and, in an instant, the old chief's blood mounted to his forehead, and, without plan or reconnoissance, orders were issued for an instantaneous attack on the enemy's position. A brisk cannonade was kept up for nearly two hours; and, at three o'clock, with jaded troops, and three-fourths of the day already passed, an attempt was made to storm intrenchments, defended by Sikh batteries, and Sikh artillerists. The brigade, commanded by Brigadier Pennycook, consisting of Her Majesty's 24th, and the 25th and 46th native infantry, though unsupported by artillery, charged some batteries, which had been placed on an acclivity. The guns were spiked; but a raking cross fire from a body of Sikhs, posted in the jungle, compelled the regiments to retreat with terrific loss. The Brigadier, forty-nine officers, and almost one-half of the privates, fell, either killed, or wounded, under those fearful volleys. Colonel Mountain, at the head of another brigade, stormed the central position through the jungle, right in the teeth of the enemy's batteries, and under a fire, which mowed the men down by scores. The 3d dragoons and 5th light cavalry made a charge against the enemy, who had advanced too far: but the 5th cavalry held back, and, in spite of the exertions of the officers, refused the encounter; and the 3d, in its fierce charge, was almost surrounded. Captain Unett, their commander, perceiving the danger, immediately gave the order to turn, and to cut their way through the enemy; which was effected, in perfect order. On the right, the brigade of Brigadier Pope, comprising the 11th dragoons, 9th lancers, and 1st and 6th light cavalry, charged on

the batteries through the jungle, under a fearful fire. The fire became heavier; the regiments appeared to be totally unsupported; the 14th remembered the skirmish and the slaughter of Ramnuggur, and that Havelock was not there; and some voice from the ranks shouted "Three's about!" The note was instantly repeated from mouth to mouth; the retiring became quicker; the expostulation and threats of the officers were unheard; and the regiments swept through their own hospital line, overthrowing dūlies, doctors, and apothecaries, in their course, and never drew bridle till fairly beyond the scene of confusion.

The disaster of H. M. 14th Dragoons has been the theme of much discussion; and a charge of cowardice has been echoed through the land. But the Fourteenth was noted in every Peninsular field for its reckless gallantry; and, six weeks before, the regiment proved, that it had lost no portion of its ancient valour. The character of a regiment does not change in a day, or in a twelvemonth either; and the Sikhs were no more terrible at Chillianwallah, than at Ramnuggur. The truth appears to have been, that, the men, finding themselves totally unsupported, their Brigadier just wounded, and with a lively recollection of the former ambushade, obeyed an order given by one of their own number. Every one else thought that it had been given by some superior officer. The officers were carried along by the rush of 600 horsemen; but the whole regiment was, we believe, as utterly free from fear, as English soldiers are or can be. Brigadier Pope did *not* give the order; for he was at the time in the hospital, wounded by a cut across the brow. Thus, with a heavy fire from Colonel Briand, ended the battle of Chillianwallah, one of the most disastrous engagements we have ever fought in India—an engagement, by which no one advantage was gained, and in which British troops were checked by a barbarian enemy, who had not even the advantage of numbers.

The victory, as it was called, was most dearly purchased on our part. "Our loss amounted to no less than 2,300 killed and wounded, of whom nearly 800 were slain. Twenty-six officers were killed on the spot, or died of their wounds; sixty-six were wounded. Her Majesty's 24th, and the 30th and 56th native infantry, were so entirely disabled, that they were compelled to be disjoined from the force, and sent back to Ramnuggur and Lahore. Her Majesty's 20th, and the 24th native infantry lost both their colours; the 25th and 26th lost each one; the 5th cavalry lost the colour they won on the field of Maharajpore." The Sikhs now took up their quarters at Russúl, in the immediate neighbourhood of the scene of conflict, and watched Lord Gough's movements, at the distance of five miles, expecting

daily to be joined by Chutter Singh. The Affghans, to the number, it was said, of 10,000, were to the north of them, watching the progress of events. Immediately after the battle of Chillianwallah, Lord Gough summoned H. M. 53rd regiment from Lahore, and H. M. 98th from Ferozepore, and also General Wheeler, with a body of 5,000 men, who had been occupied, during the greater portion of the campaign, in reducing and levelling several forts in the Jullundhur, and in some severe skirmishes with a body of rebels, who had obtained possession of Kote Kangra. Lord Gough also began to intrench himself, waiting for the fall of Múltan, and the arrival of the force employed in besieging it.

The army of the Punjab remained in a state of total quiescence opposite the enemy, until the 6th of February; when a rumour was spread abroad, that the Sikhs were no longer in their Camp at Russúl. The officers of the espionage department smiled incredulously:—for, having lately most liberally rewarded a sepoy with 7 rupees for important intelligence, how could any thing of consequence escape them? The rumour, however, grew and prevailed, and at length it turned out to be an absolute fact. The Commander-in-Chief rode over the ground, which the Sikhs had vacated, and the intrenchments, which they had thrown up, and which it would have cost thousands of lives to capture. But the men and the cannon, which should have defended them, were gone: and, it became manifest, that the Sikh army of 30,000 men, with sixty guns, all lying within four miles of the British encampment, had marched round the army of the Punjab, had escaped the eyes of its Commander-in-Chief, and was now in his rear, in full march for Lahore.

Various reasons have been assigned for this move on the part of Shere Singh, and want of food, of pay, and of excitement, have each been put forward as the cause of it: but the supposition, that it might be a magnificent stroke of generalship, of which the greatest general would have been proud, has been overlooked. The march placed Shere Singh at once in the most fertile districts of the Punjab, with full privilege of plunder, and with the road open to Lahore or Delhi. Had he been successful, he would probably have turned aside, crossed the Sutlej, and fallen upon the provinces of Northern India, like a devastating torrent. By the success of the movement, the hope of unlimited plunder, the desire of renewed liberty, and all the strongest impulses of man's nature, would have been enlisted against us. The warrior races of the North might have taken arms, and every petty prince might have poured in his horde of armed and half-disciplined dependents.

From all these evils, real and imaginary, the state was saved, by a conjunction of circumstances in great part fortuitous.

Shere Singh found the Chenab guarded by Brigadier Markham's brigade, and the 53rd Foot. General Whish left Multan on the 27th of January. He was detained on his way for the reduction of the fort of Chiniout; but, on receiving the most pressing injunctions from the capital, he pressed forward by forced marches, and arrived at Ramnuggur on the 13th of February. He there heard that the whole insurgent force was in full march on the Chenab; a part of them having already crossed at Wuzirabad. Without waiting for orders, he pushed on two nine-pounders, and some irregular horse, up the bank of the river, on the 14th. The next day, a larger force under Col. Byrne was sent in the same direction. They marched over twenty-four miles of ground, and reached Wuzirabad in the evening. It turned out that the enemy had not crossed; but there can be no doubt, that, but for this timely arrival of our troops, they would have done so. On the 16th, Brigadier Markham's brigade pushed on to a ford, half way between Ramnuggur and Wuzirabad; and half the force crossed. On the same day, Col. Byrne despatched a considerable force under Col. Alexander to Sudra Ghat, where a body of 6,000 Sikhs were on the eve of crossing. They were not able to effect their purpose, but were driven back on their own head quarters at Guzerat. These rapid and energetic movements prevented the army of Shere Singh from pouring down on Lahore; for it was the intention of the Sikhs to have pushed on to the capital, before they could be overtaken.

Shere Singh, thus defeated in his attempt to gain possession of Lahore, was anxious to regain his formidable intrenchments at Russul; but he found himself hemmed in by our troops, and was constrained to make preparations for the final struggle at Guzerat, on the very spot, which his father had pointed out to him, at the beginning of the campaign, as the field where the battle of Sikh independence was to be fought. We need not enter into any detail of the position of the various brigades in this engagement. The glory of the victory of Guzerat, one of the most complete we have ever won in India, belongs almost exclusively to the artillery. Contrary to his usual custom, the Commander-in-Chief allowed himself to be prevailed on to give his guns full play. Never, in any battle fought in India, has there been so formidable an array of artillery brought to bear upon any enemy. For two hours, one hundred pieces of cannon, for the greater part of the largest calibre, poured in such a destructive fire, as no enemy had ever been exposed to in this country. The Sikhs themselves described

the effect of that torrent of shot by, the expression, that they felt themselves, "as if in hell". They stood their ground, however, with undaunted bravery, till they saw all their guns dismounted; and, at length, losing all heart, they fled in confusion, leaving their whole camp equipage and stores, with an incredible amount of ammunition, in our hands. Fifteen hundred Affghan horse, conspicuous for their boldness, made a desperate attack: but they were charged, in the most magnificent style, by the Scinde horse, mustering only 500 men. Amidst all the exploits of that memorable day, none excited more applause, than the mode in which this body disposed of the Affghan cavalry. Sixty pieces of cannon were the fruit of this splendid victory. Our loss, in killed, wounded, and missing, amounted to about 800 men.

General Gilbert, well known as the best rider in India, was despatched, with 15,000 men, and 30 guns, to complete the ruin of the vanquished army; and, at the head of this force, the flying General crossed the Jhelum on the 28th. General Campbell captured the strong fort of Rhotas: Colonel Steinbach moved from the hills, where he had remained with Golab Singh's own troops: Capt. Abbott came from Nara, with a body of irregulars, to watch the campaign; and the Sikh chieftains found that further resistance was hopeless.

On the 6th of March, the European prisoners in the hands of the Sikhs were delivered up. On the 8th, Rajah Shere Singh came in, to make arrangements for the surrender of the chiefs and troops. On the 14th, General Gilbert reached Rawul Pindi, and received the surrender of the whole body of the Sikh army, 16,000 in number. The men, sad and downcast, but with a soldier-like sternness of feeling, cast their swords into the heap, as they passed, and saluted to the spirit of the steel. The total number of guns surrendered was forty-one, which, with those taken at Guzerat, Chillianwallah, and Multan, made the whole number of pieces of ordnance, which had fallen into our hands during the present campaign, One Hundred and Fifty-eight.

These events were made known by the Governor General in a very spirited notification, which communicated a thrill of delight to the whole community of India; but no sentence in that document attracted greater admiration, than that, in which his Lordship declared, that the war would not be considered to be concluded, till Dost Mahomed Khan and the Affghans had either been driven from the province of Peshawur, or destroyed within it. The gratification of thus putting a termination to the campaign was granted to Sir Walter Gilbert; and

we cannot give a better description of his dashing exploits than in the language of Dr. Buist:—

"The moment the Sikhs could be disposed of, Gilbert once more pushed on, in hopes of overtaking the Affghans, before they had crossed the Indus, or, at all events, of preventing them from destroying the means of communication across. By a forced march of forty-six miles, they approached the Indus in thirty-one hours: the troops arrived at Attock in the forenoon of the 17th. When about six miles from the river, intelligence was received by Major Mackeson, that Attock had just been evacuated by the enemy; that they had taken three guns along with them from the fort, and were about to destroy the bridge of boats, to prevent us following them. Upon this, Gilbert and Mackeson, with a small escort from Nicholson's irregulars, with Lumsden's Guides, and the whole Staff, pushed ahead at a gallop, and only slackened their speed on reaching an eminence close by the river. About one hundred of the enemy were here seen dealing destruction on the bridge: 5,000, or 6,000, were drawn up on the opposite bank. The sight of British officers, supposed to be at least two days' march distant, set them all a scampering; and fifteen of the best boats forming the bridge were consequently secured. The principal object we had in view was thus completely accomplished, and the means of following on the heels of the flying foe attained. The artillery now came up, when the Affghans found it convenient to withdraw, after firing some guns at us, which did no harm. The fort of Attock was occupied immediately; and, early the following morning, a brigade crossed over, and took possession of the small fort of Hydrabad, by which the town is commanded. Negotiations had been entered into with the Khyberis, in hopes that the flight of the Affghans might be intercepted, and they left to receive the punishment, they so well deserved, near the famous battle-field of Junnâd. Since quitting Lord Gough's camp, General Gilbert had succeeded to admiration in carrying to a successful issue every plan he had undertaken to execute,—securing, in doing so, the fullest confidence of those under his command. Vast numbers of disbanded Sikhs were now returning to their homes in a state of destitution and wretchedness; the bulk of them seemed to belong to the Protected States; a large number were men from Hindûstan: in both cases allured to the field as mercenaries, or in hope of plunder, with no feelings of vengeance to gratify, or objects of patriotism or ambition to serve. A mismanaged insurrection anywhere in India would bring thousands of such miscreants into the field against us.

Gilbert crossed the Indus on the 19th and 20th, and pushed on by forced marches for Peshawar, where he arrived on the 21st and 22d. The Affghans, flying in terror of their lives, without baggage or impediment, had proved too fleet for him: they had ascended the passes, and got beyond his reach, before he could approach within twenty miles of them. The gates of Peshawar had been shut against them; but they burnt the cantonments and the house of the resident, and destroyed the suburbs and villages around. The war was now entirely over: and, so soon as the intimation of the complete success of General Gilbert reached the Governor-General, a proclamation was issued, intimating that the Sikh Sovereignty had ceased, and that the Punjab was annexed to our dominions."

Lord Dalhousie now determined on the final coup d'état. On the 29th of March, a strange scene appeared in the capital of the Punjab. There, in full durbar, stood the chiefs, who had so long swayed the destinies of the country of

the Five Rivers, and the boy Maharajah, whose dominions were about to be absorbed : and, in the midst of that crowd of almost sovereigns, the secretary of the hired servant of twenty-four grocers pronounced the deposition of a monarch, the conquest of a country larger than their own, and the completion of an Empire, more extended than that of Rome, and mightier than that of Genghiz Khan.

The document itself, that transferred the dominion of five millions of human beings, was most simple and authoritative.

The war having thus been brought to a successful termination, the Governor-General determined at once on the annexation of the Punjab to the British dominions. This article has been extended so much beyond our original design, that we have left ourselves no room for those reflections, which this important and indispensable measure naturally create : but we trust that an opportunity will hereafter be afforded us of resuming the subject, and of reviewing the political arguments by which it was justified, and the happy results which were expected to flow from it. At present, we shall simply remark that, on the 29th of March, Mr. Elliott, the Foreign Secretary of Government, appeared at Lahore in the *last* Sikh durbar ; and, in the presence of the chiefs, who had adhered to our cause, and of the young Rajah Dhulip Singh, read a proclamation of the Governor General, containing the decree that the family of Runjît had ceased to reign, and that the country of the Five Rivers was incorporated with the British Empire ; which, in the course of less than a century, had thus been extended from the Mahratta ditch to Peshawur. The reasons, which influenced his Lordship's decision, we record in his own words :—

“ The relations which exist between the two states, the duties and obligations of each, were marked out in the treaty of Lahore, and in the subsequent articles of agreement, concluded at Bhyrowal.

The British Government has rigidly observed the obligations, which the treaty imposed ; and it has fully acted up to the spirit and letter of its contract.

It has labored to prove the sincerity of its profession, that it desired no further aggrandizement. It has maintained the Government of the Council of Regency. It has advised the adoption of measures, which improved the condition of the troops, and lightened the burdens of the people at large. It has given liberally the use of its forces to aid the administration of the State of Lahore. It has carefully avoided to offend by any of its acts the feelings of the people, and has meddled with none of the national institutions and customs.

How have the Sikhs, on their part, fulfilled the corresponding obligations, which the treaty imposed upon them ?

There is not one of the main provisions of the agreement which they have not either entirely evaded, or grossly violated.

In return for the aid of British troops, they bound themselves to pay to us a subsidy of 22 lakhs per annum.

From the day, when the treaty was signed to the present hour, not one rupee has ever been paid. Loans advanced by the British Government, to enable them to discharge the arrears of their disbanded troops, have never been repaid; and the debt of the state of Lahore to this Government, apart altogether from the vast expenses of this war, amounts to more than 50 lakhs of rupees.

They bound themselves to submit to the full authority of the British Resident, directing and controlling all matters, in every department of the State.

Yet, when the British officers were murdered at Multan by the servants of a chief officer of their State, and, after having been deserted by the troops of the durbar, who, unhurt, went over previously to the service of the murderer, the Government of Lahore, in reply to the orders of the Resident, neither punished the offender, nor gave reparation for the offence: but declared, that their troops, and especially the regular army of the State, were not to be depended upon, and would not act against the Dewan Mulraj.

The conduct of the Sikh troops, in their various districts, speedily justified our suspicion of their hostility.

Repressed for a time, their disaffection broke out in one quarter after another, till, ultimately, nearly all the army of the State, joined by the whole Sikh people throughout the land, as one man, have risen in arms against us, and, for months, have been carrying on a ferocious war, for the proclaimed purpose of destroying our power, and exterminating our race.

Thus we see that, not only has the control of the British Government, which they invited, and to which they voluntarily submitted themselves, been resisted by force of arms, but peace has been violently broken; and the whole body of the nation—army and people alike—have, deliberately, and unprovoked, again made war upon us.

If it should be alleged that this has been merely the act of a lawless soldiery, similar to that which was committed in 1845, and that it has been done against the will, and in spite of the opposition, of the Sirdars: I answer, admitting it to be so, what justification does that furnish for them, or what security can the reflection afford to us?

That which we desire to see—that which we must have, as indispensably necessary for the future prosperity of the territories we already possess, is peace throughout our bounds. That which we desire to secure in the Punjab is a friendly and well-governed neighbour, and a frontier without alarms, and which does not demand a perpetual garrison of 50,000 men. Of what advantage is it to us that the Council and Sirdars are friendly, if they have not the ability to control their army, which is hostile?

If the Sikh army and Sikh people are eager to seize, and have the power of seizing, on every opportunity of violating the peace, which we desire to render permanent, of what value to us, as a state, is the impotent fidelity of the Sirdars? But the fact is not so. Their chiefs have not been faithful to their obligations. The troops and the people having risen in arms—their leaders have been the Sirdars of the State, the signers of the treaties, the members of the Council of Regency itself.

If you will refer to the roll, which was lately transmitted to you, of those who surrendered to Sir Walter Gilbert at Rawul Pindi, and to other documents, which have from time to time been forwarded, you will find there an array of the names of the Sirdars, who then surrendered, and were disarmed.

Analyse it, and you will find there, not merely men who are of note in the Punjab, but the very chiefs whose signatures are affixed to the treaties of peace. For it is a shameful fact, that of the Sirdars of the State, properly so called who signed the treaties, the greater portion have been involved in these hostilities against us.

It responsibility should be sought for the Sikh nation, in the statement that their Government, at least, has taken no part against us—you will not admit that plea, when I acquaint you, that, while the Regency, during these troubles, gave no substantial or effective assistance to the British Government, some of its chief members have openly declared against us, and one of them has commanded the Sikh army in the field.

In the preceding paragraphs I have said, more than once, that the Sikhs have risen in arms against the British. I request you to dwell upon the phrase: for I desire to press upon your attention the important fact, that this rising in the Punjab has not been a rebellion against the Maharajah Dhillp Singh; that, on the contrary, the Sikhs have constantly professed their fidelity to their Maharajah, and have proclaimed that it is against the British and against the British alone, that this war has, from the beginning, been directed.

That the destruction of British power, and the expulsion of the British themselves, was the real object of the war (and not an insurrection against the Maharajah and his Government) does not rest upon my assertion alone, or upon inference. It has been avowed and declared by themselves, in all their own letters and proclamations to the neighbouring chiefs, to Muhammadan powers, and to the native soldiers of the British Government.

I will only quote a single passage from one of these proclamations, which was issued by Rajah Shere Singh. It sets forth distinctly, and in a few words, the sentiments and objects, which are declared in all the similar documents, and fully establishes the correctness of the statement I have made. It runs thus:—

‘By the direction of the Holy Gurú, Rajah Shere Singh and others, with their valiant troops, have joined the trusty and faithful Dewan Mulraj on the part of the Maharajah Dhillp Singh, with a view to eradicate and expel all the tyrannous and crafty Feringhis. The Khalsaj must now act with all their heart and soul.

All who are servants of the Khalsaj, of the Holy Guru, and of the Maharajah, are enjoined to gird up their loins, and proceed to Multan.’

And the paragraph concludes with this truculent injunction, addressed to the inhabitants of the Punjab:—

‘Let them murder all the Feringhis, wherever they can find them.’

This is not all. Not content with making war themselves upon the British, the Sikhs have labored to induce other States and Sovereigns in India to attack us also.

There are in the possession of the Government many letters, which have been addressed by the Sikh Chiefs to the neighbouring Powers, Mussulman, Hindú, and Sikh, earnestly invoking their assistance; and the burden of every letter is the necessity of destroying and expelling the British.

The bitterness of their enmity has carried them yet further still. No one ever thought to see the day, when Sikhs would court the alliance of Afghans, and would actually purchase their assistance by a heavy sacrifice. Yet their hatred to the British name has induced them to do even this. They invited the Amir, Dost Mahomed Khan, from Cabúl, to their aid. They promised him, as the reward of his assistance, the province of Peshawar, and the lands which the King of Cabúl formerly held; a possession, which the Sikhs themselves valued beyond all price; which for years they had struggled to obtain; and which they gained, and held, only by vast expenditure of treasure, and with the best blood of their race.

The Amir of Cabúl came. He raised immediately the standard of the Prophet in their land, defiled the temples of the Sikh religion, plundered their villages, and most brutally treated their people: yet, for all that, the

Sikh nation continued, to court the Amír of Cabúl still. They have fought, side by side, with his troops, and, after their defeat, applied for the continuance of his assistance. So inveterate has their hostility to us proved to be, that the securing of Afghan co-operation against the British has been sufficient to induce the Sikhs to forget their strongest national animosity, and has, in their eyes, compensated even for Afghan cruelty to their people, and for Mahomedan insults to their religion.

Such have been the acts of faithlessness, and violence, by which the Sikh nation has, a second time, forced upon us the evils of a costly and a bloody war!

If the grossest violation of treaties—if repeated aggressions, by which its national security is threatened, and the interests of its people are sacrificed—can ever confer upon a nation the right of bringing into necessary subjection the power that has so injured it, and is ready to injure it again; then has the British Government now acquired an absolute and undoubted right to dispose, as it will, of the Punjab, which it has conquered.

The British Government has acquired the right; and, in my judgment, that right must now be fully exercised.

I hold that it is no longer open to this Government to determine the question of the future relations of the Punjab with British India, by considerations of what is desirable, or convenient, or even expedient.

I hold that the course of recent events has rendered the question one of national safety; and that regard for the security of our own territories, and the interests of our own subjects, must compel us, in self-defence, to relinquish the policy, which would maintain the independence of the Sikh nation in the Punjab.

I cordially assented to the policy, which determined to avoid the annexation of these territories on a former occasion.

I assented to the principle, that the Government of India ought not to desire to add further to its territories; and I adhere to that opinion still. I conceive that the successful establishment of a strong and friendly Hindu Government in the Punjab would have been the best arrangement that could be effected for British India; and I hold that the attempt which has been made by the British Government to effect such a settlement of the frontier state, the moderation it has exhibited, and its honest endeavours to strengthen and aid the kingdom it had re-organized, have been honorable to its character, and have placed its motives above all suspicion, whatever may now be its policy towards the Punjab.

Experience of subsequent events has shown us, that a strong Hindú Government, capable of controlling its army, and governing its own subjects, cannot be formed in the Punjab.

The materials for it do not exist; and, even if they were to be found, it has now become evident, that the object, for which the establishment of a strong Sikh Government was desired by us, would not thereby be accomplished.

The advantages, which we hoped to derive from such a Government, were the existence of a friendly power upon our frontier; one which, from national and religious animosity to the Mahomedan powers which lie beyond, would be an effectual barrier and defence to us.

But we have now seen, that the hatred of Sikhs against the British exceeds the national and religious enmity of Sikhs against Afghans; so that, far from being a defence to us against invasion from beyond, they have themselves broken out again into war against us, and have invited the Mahomedan powers to join with them in the attack.

Warlike in character, and long accustomed to conquest, the Sikhs must of necessity detest the British, as their conquerors.

Fanatics in religion, they must equally detest us, whose ~~and~~ and whose customs are abhorrent to the tenets they profess.

It was hoped, that motives of prudence and self-interest might possibly counteract these feelings; that the memory of the heavy retribution, which their former aggression brought upon them, would have deterred them from committing fresh injuries; and that consciousness of our forbearance, and conviction of our friendliness, might have conciliated their good-will, or, at least, persuaded them to peace.

Events have proved how entirely this hope must be abandoned. If, in less than two years after the Suttlej campaign, they have already forgotten the punishment which was inflicted by us, and the generous treatment they subsequently received, and have again rushed into war against us, it would be folly now to expect, that we can ever have, either in the feelings, or in the reason, of the Sikh nation, any security whatever against the perpetual recurrence, from year to year, of similar acts of turbulence and aggression. There never will be peace in the Punjab, so long as its people are allowed to retain the means, and the opportunity, of making war. There never can be now any guarantee for the tranquillity of India, until we shall have effected the entire subjection of the Sikh people, and destroyed its power as an independent nation.

It may probably be suggested, that it would be well for us to avoid the appearance of extending our conquests over another Indian kingdom; and politic to retain the Sikh nation as an independent state, while we provided, at the same time, for our own security, by introducing a larger measure of British controul into the Government of the Punjab, and by effecting such further changes, as would place all actual power in our hands.

I am unable to recognise the advantage of such a course.

By the articles of Bhyrowal, the Government of the Punjab was intrusted to a Council of native chiefs, subject to the authority of the Resident in every department of the State.

If a more stringent and really effectual controul is now to be established, the army of the State must be reorganized and made directly subject to the orders of the Resident.

The native administration must be set aside, and European agency must be generally introduced. The Maharajah would be the Sovereign on the throne, and the Punjab would be governed for him by British officers.

Short of this, no change can be introduced, which will give to the Resident any more effectual controul than he has hitherto held.

But, if this be done; if a British functionary is at the head of the Government; if European agents conduct the duties of civil administration; if the government of the chiefs is removed; if the army is (as it will be in such a case) entirely ours, raised, paid, disciplined, and commanded, by British officers; then I say, that it would be a mockery to pretend that we had preserved the Punjab as an independent State. I conceive that such a policy would neither be advantageous to our interests, nor credible to our name.

By maintaining the pageant of a Throne, we should leave just enough of sovereignty to keep alive among the Sikhs the memory of their nationality, and to serve as a nucleus for constant intrigue. We should have all the labour, all the anxiety, all the responsibility, which would attach to the territories, if they were actually made our own; while we should not reap the corresponding benefits of increase of revenue, and acknowledged possession.

Nor should we, by such shifts, gain credit with the Powers of India, for having abstained from subverting the independence of the State. Native Powers would perceive, as clearly as ourselves, that the reality of indepen-

dence was gone; and we should, in my humble judgment, neither gain honour in their eyes, nor add to our own power, by wanting the honesty and the courage to avow what we had really done.

It has been objected, that the present dynasty in the Punjab cannot with justice be subverted, since Maharajah Dhulip Singh, being yet a minor, can hardly be held responsible for the acts of the nation. With deference to those, by whom these views have been entertained, I must dissent entirely from the soundness of this doctrine. It is, I venture to think, altogether untenable as a principle; it has been disregarded, heretofore, in practice; and disregarded in the case of the Maharajah Dhulip Singh himself.

When, in 1815, the Khalsa army invaded our territories, the Maharajah was not held to be free from responsibility, nor was he exempted from the consequences of his people's acts. On the contrary, the Government of India confiscated to itself the richest provinces of the Maharajah's kingdom, and was applauded for the moderation, which had exacted no more.

The Maharajah was made to tender his submission to the Governor General in person: and it was not, until he had done so, that the clemency of the British Government was extended to him, and his Government restored. Furthermore, the Maharajah having been made to pay the penalty of the past offences of his people, due warning was given him, that he would be held, in like manner, responsible for their future acts. The Maharajah, in reply, acknowledging this warning, says: "If, in consequence of the recurrence of misrule in my Government, the peace of the British frontier be disturbed, I should be held responsible for the same."

If the Maharajah was not exempted from responsibility on the plea of his tender years at the age of eight, he cannot, on that plea, be entitled to exemption from a like responsibility, now that he is three years older.

As the Honorable Company most fully approved of his being deprived of the fairest provinces of his kingdom, in consequence of the misdeeds of his people, in 1816, it cannot, on the same principle, condemn his being subjected now to the consequences of whatever measures the repeated, and aggravated, misdeeds of his people may have rendered indispensably necessary for the safety of British interests."

The last act in this great drama was the trial of the hero. The Governor-General had, from the first, resolved, that Múlraj, if taken alive, should receive a fair trial; and, if pronounced guilty of the murder of Agnew and Anderson, should suffer the penalty awarded. He was accordingly brought to trial, on the 31st of May, before a Court composed of C. G. Mansel, Esq., C. S., President, H. Montgomery, Esq., C. S., and Colonel Penny. J. B. Bowring, C. S. acted as counsel for the prosecution, and Captain G. W. Hamilton for the prisoner. The defence demonstrated at once the exceeding ability of Captain Hamilton, and the exceedingly untenable nature of the line of defence adopted. We have already given the details of the evidence adduced, and have only to add the penalty, by which they were expiated. The commission adjudged Múlraj to death, with a recommendation to mercy; and the Governor commuted his sentence to transportation for life.





